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1537 W. 29th Street
Indianapolis, Indiana

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PHYSICAL EDUCATION AS A PROFESSION

ELMER D. MITCHELL, Ph.D.
Professor of Physical Education, University of Michigan
Editor: *The Journal of Health and Physical Education*

Physical Education, contrary to the popular impression, is not a new subject but rather is the *oldest* of all branches of *education,* going back to primitive life before letters and writing were known. At the same time, however, it is the *youngest* of the professions. Within the last fifty years the crowding of people into large cities, together with the new machine age, has so completely transformed man's life as to make it almost unrecognizable to that in which he lived for so many thousands of years. That people have not been successful in adjusting themselves to the new conditions that have so quickly come upon them, is shown clearly by the rapidly increasing amount of organic diseases, by the disturbing and threatening amount of delinquency and crime, and by the growing amount of mental tension, unhappiness, and unbalance, and the craving for artificial excitement that is evident everywhere today.

Here is where the profession of physical education comes in. Physical education is *not* a fad, trying to bring the people something new. To the contrary, it brings the nearest possible substitute to the type of life that older generations lived and enjoyed. It tries to surround the child with healthful conditions in an environment that has become tremendously complicated; it tries to provide all children with the health knowledge that is essential to combat a myriad of threatening diseases; it detects physical defects that would retard the child's intellectual progress in school and otherwise impair his efficiency in living; and, through scientific systems of measurements, physical education makes it possible to prescribe for each child the proper amount and kind of exercise for him to best develop and grow. And, what is more, the program of physical education gives the enjoyment and citizenship training that comes from groups of boys and girls busily and happily engaged in their games and sports. Furthermore, and this is most important in this age when the work of adults has been so shortened and that of children has been done away with entirely, physical education assumes a great share of the responsibility of training both children and adults in many skills that are preliminary to the wholesome use of their new leisure time.

These are only a few of the responsibilities and accomplishments of physical education. One can see that this profession is busily engaged in trying to adjust people to a new and rapidly changing environment, and that its function is to make people adaptable and to provide compensation for that part of man's life which crowded cities and specialized machine labor have taken away from him.

So much for what physical education does. The next question to the group of boys and girls who are planning to enter this profession is, "Do you think you would like to be a physical education teacher?" Before you answer "yes" you should think over the following things which are suggested as being important to success in this particular vocation.

In general, you should have a liking for games, for sport, for gymnastics. You should have the play spirit which you will be expected to instil in others. If you are an athlete on the football, basketball, baseball, or track teams, that will be an asset. If you are an accomplished gymnast, all the better. If you are a good swimmer, or a champion in tennis or in golf, that also is fine. This athletic excellence will make a good start for you on the road to success in this profession, and the keen spirit of enjoyment which you have developed in your favorite sports will be transferred, as a rule, to any sport you may have to teach. It is not necessary, however, to be a champion athlete in order to be a successful coach or physical director. There are numerous cases where All-American athletes have failed as coaches and there are many cases of scrub team players who have reached the heights in the coaching profession. Coach Zuppke of the University of Illinois is one example of an outstanding coach who did not make the first team in high school or college. The point to be emphasized is that you should have teaching ability so that you can impart your own knowledge to others. If you are planning to grow in the profession you will also need to have organizing ability as well. This attribute is needed in playground and intramural leadership, and in the larger administrative positions in colleges and in large cities.

Another prerequisite is that you should like to be with people. The physical director's life, by the very nature of his occupation, is bound to be one of constant association with other people of all ages and from all walks of life. His subject is one which all children from the kindergarten through the high school are required to take. Consequently, he will be meeting boys all day long in the gymnasium

classes, in the after-school intramural leagues and tournaments, and on the school teams. In addition, his subject is one in which the whole school and in fact the whole community is interested. He will, therefore, have to talk shop with many interested rooters, give stories to newspaper men, belong to many committees concerned with Boy Scout and playground projects, and he will have to appear regularly before Parent-Teacher groups, civic clubs, Father and Son banquets, athletic banquets in honor of the team, and so on. His is a position that brings him into the public limelight, and he has a strategic place in the life of the community which probably no other teacher, unless it is the superintendent or principal, can claim. In short, if you are to be a physical director, remember that your school and community will put many unexpected demands upon your time.

The next point leads naturally out of the one just given. If you like regular hours, if you like short hours, if you like to be through work when other people are through—*do not plan* to be a physical director. The physical director has just begun his day when other teachers are going home. He has his regular gymnasium and health classes during the day, to be sure, and in many cases he may also teach some classes in academic work as well, but wait—there is more—there is the football team to coach from four to six, and between times he must give a look at the second team as well as to go over to the intramural field to see that the intramural teams have playing equipment and officials. A hurried supper follows, for there is work still to do. Some recreation classes have been organized in the evenings at the school, and who is better able to handle this work than the physical director? Such a routine is varied by attendance at the Friday evening mass meeting and by assistance as Scoutmaster to some fatherless Boy Scout group. Saturday is just another work day. In the morning there are details in connection with the afternoon game or maybe the time is taken up by a trip to another town where the game is to be played.

In the afternoon is the game itself with the mental strain and reaction involved. Sunday he is thinking about the mistakes of the game in order that he may correct them and he is planning his program for the coming week. Sure, it's work—and a lot of it—but the physical director is in this job because he likes it and because he has the unflagging vitality and enthusiasm to carry on in spite of the amazing varieties of demands upon him.

And, in deciding to be a physical education teacher, there is one more thing for you to consider. If you are ambitious to make money, to be an affluent member of your community,—physical education is *not* the profession for you. It is a teaching profession and the salary is a modest one compared with what you would obtain with the same amount of energy expended in business or the favored professions like law and medicine. To offset this lack of high remuneration there is, on the other hand, some advantage in the certainty that goes with a salaried position, especially if one is satisfied to live within moderate means.

We will next show you a picture of the representative physical education teacher: first,—as you are now—a student in high school making up his mind; next, as a student preparing for this career in college; then, as a young graduate making good out in the field; and lastly, as an experienced individual who has achieved success in his profession, as we assume you will.

The typical physical education student as we find him in high school, is characterized by an intense interest in team games. His group interests are strong. The preparation for the football or basketball games, or the gymnastic demonstrations, as the case may be, occupies so much time that he does not engage in many other school activities. Despite the demands of the athletic practices upon his time and energy he is a better than average student. He has to be in fact, because the standard of scholarship necessary to be eligible to play is slightly higher as a rule than that averaged by the student body as a whole.

In general, and there are always exceptions, the physical education student likes the social sciences —a preference quite natural in view of the fact that his profession deals with people and their happenings rather than with things. In general science, too, his interest is high—a splendid thing considering that a large number of scientific courses, particularly those which deal with the structure of living beings, will face him in his professional preparation in college. While he does not share any great enthusiasm for chemistry or physics, nevertheless a working knowledge of these subjects is helpful later. Chemistry, for example, is valuable in his hygiene courses, and absolutely necessary if the student should decide to specialize in the public health field. Physics has a bearing on anatomy and also on a later course called kinesiology which deals with the science of muscular movement. Furthermore, these sciences are a requirement if the student should decide that he wants to go on and take the course in medicine.

We are now ready to accompany our physical education student to college. Here, he finds not an easy course, but instead a course so difficult that many students drop out or transfer to other departments. Those students who do succeed are spurred on by a strong professional interest. The time of the physical education student is taken up far more than that of the average undergraduate student. He must take the laboratory sciences of biology,

chemistry, anatomy, physiology, and psychology, and these laboratory courses are time-consuming. He also meets such courses as sociology, kinesiology, and bacteriology, and hygiene in addition to the cultural background of courses in English, history, foreign language, mathematics, and so on, part of which are required of him and part of which are electives.

To the physical education student, however, the entrancing part of his preparation lies in those courses which are directly connected with the work he proposes to teach. There are one hundred and twenty-four hours required in the four years before graduation, and of this total there are twenty-four hours of work in the theory and practice of physical education activities. In this group there are courses in the techniques and team strategy of such sports as football, basketball, baseball, track, etc. There are courses in the fundamental principles of gymnastics up to the highly coordinated events. There are courses giving hundreds of playground games for all ages and all occasions. There are courses in athletic training and conditioning. There are courses in giving physical tests and measurements and in corrective exercises. There are courses explaining the successful methods used in organizing large numbers of students in intramural leagues and tournaments. The student learns the correct teaching methods in the recreative sports of tennis, swimming, golf, handball, boxing, wrestling, fencing, and other activities necessary to prepare him to become the recreational expert of the community. These subjects sound easy, but it is surprising how much academic content there is to them even though they are considered as laboratory courses, combining theory and practice, and, like the sciences already mentioned, they are very time-consuming.

The physical education student thus has a double load of laboratory courses to carry. As a consequence he has but little leisure time, and in this respect is gaining a good preparation for a profession which as we have already shown demands long and irregular hours.

And now we will discuss the reward that the physical education student can plan to receive when he finishes his four years of college preparation and finally emerges upon that exciting period of getting a job. To start with, he will receive a salary of from $1,000.00 to $1,500.00 depending upon the record he has made in college as a student and also upon his luck in making contact with a position which he may desire to accept. This is a better start than in most professions, but the advances in comparison are very slow and the rewards for years of service are not financially attractive. The average physical education teacher with more than ten year's experience is probably getting between $2,000.00 and $3,000.00 a year.

Before the depression the beginning salary scale was more attractive but during the years 1930 to 1934 there was a great surplus of teachers and many of them were unable to find positions. Since then many governmental projects in regard to adult education and leisure-time education have utilized the services of a large group of previously unemployed physical education teachers so that now the demand has almost caught up with the supply. With the remarkable developments in this field of education the chances seem bright that more and more teachers will be needed to carry on the enlarged programs of health and recreation that communities are developing.

The new teacher out on the job will find that his first responsibilities will be in connection with the handling of the activity programs and in teaching health classes and possibly other classroom subjects. Not many at first will be administrators, although in the small community the young teacher is apt to be entrusted with *all* the work with such help as he may obtain from student leaders. In addition to this work which has already been outlined to some extent, the new teacher will find that one of his duties will be to make a speech before the school, and later before civic clubs and other groups. A very practical suggestion, therefore, to those of you who have already planned to become physical directors is that you take all the training in public speaking that you can possibly fit into your course. You may never become a ready speaker, but the practice will make it easier for you to meet these occasions when they appear.

The possibilities of summer work may be of interest to you. In the summer the young physical director may find a chance to act as a playground leader, swimming guard, or camp counselor. While none of these short-term positions pay very much, the young teacher should look beyond the immediate remuneration and see that any practical experiences he may gain in this way will be of future value to him, particularly if he is promoted to a position in a larger community where he must administer a staff of other teachers and direct a great variety of activities.

And now what of the future for the ambitious young man or woman who wishes to advance in this profession. From the standpoint of maximum salary, the best paying positions lie in the field of athletic coaching, particularly football, but the tenure of office is always precarious and uncertain. A better prospect for the teacher who does not wish to become so highly specialized in any one sport is in the field of administration. The larger cities and colleges now combine in one department the various sub-departments of health education, physical education, athletics, and community recreation, and where this is true, an administrative ability is

needed that is second only to that of the superintendent of schools. In the very largest cities of the country as many as two hundred to three hundred teachers may be combined in one staff. The general range of salaries of physical education directors in the larger cities and universities runs from $2,500.00 to $5,000.00, although there are a few directors who receive an amount beyond that figure.

The teacher who wishes to advance from the more general physical education work to one of these higher administrative positions will find it necessary to continue his education through the medium of graduate courses that are now offered in this field. This is possible through Saturday morning courses if the University is conveniently nearby. To obtain the Master's Degree in Physical Education twenty-four hours of graduate study are necessary and also the writing of a thesis. A student may return to summer schools and obtain his degree in four summers. The Master's Degree is becoming more and more necessary for one who wishes to obtain a college position or a position as head of a city department of any size. For those who wish to teach in the larger universities the Doctoral Degree requiring two years beyond the Master's Degree is now necessary.

As an interesting comment upon the growth of the training given to physical education teachers, it may be advisable to digress for a moment to show how the colleges and universities have introduced courses for this new profession. In 1911 there were but twenty schools offering physical education courses; today there are more than two hundred. Before 1920, the courses offered by teacher-training institutions were mostly of two years duration. That length of time was considered sufficient and most of the time was occupied in making the performer skillful in the various athletic and gymnastic activities. During the 1920's the courses were lengthened from three years to four years and made broadly cultural. Before 1930 there were only a few schools offering graduate training in Physical Education but five years later, in 1935, there were thirty-five schools offering courses that led to higher degrees.

For the most part, attention in this paper has been given to the teacher carrying on the regular duties of the profession and to those who aspire to become leading coaches or departmental administrators. There are, of course, several fields of specialization that are possible. Some of the graduates of physical education who enjoy the health aspects of the work may later take up teaching of Hygiene courses or may transfer to the public hygiene field. A few are now occupied in research work in our larger universities although as yet the field is so new that the number of research workers is small compared with the more established fields. Again, there are those individuals who are strongly inclined to the sociological aspects of the work and who carry on their graduate work in the field of recreation, planning later to head up the recreation departments of large cities.

In this discussion, the topic has been handled from the boy's angle although but little differentiation is needed to cover the profession from the standpoint of the girls planning to enter it. There will be some difference in the training because the interest of the girls in health teaching is stronger than that of the boys, who are so much more wrapped up in activity work. Dancing is also a favored activity with the women and the women's departments on the whole are more interested in the corrective phases of physical education. In the elementary schools and colleges their problem of teaching is simplified by the fact that they do not have the responsibility of varsity athletics as do the men.

In concluding, this article has tried to encourage those of you who have already made up your minds to enter the profession of physical education and possibly it may influence some other promising young men and women to consider this choice of a career. Besides the living it affords, physical education offers certain unique advantages such as the wide contacts in the community it offers, and the chance to influence wholesomely the lives of many boys and girls; physical education has a beneficial effect upon the teacher himself or herself. The very nature of the work keeps one physically fit and young in spirit. Again, there is the further satisfaction in belonging to a profession that gives its efforts to making people healthy and happy. Physical Education does not profit by other people's adversities as is necessarily true with many of the professions but instead is constantly working to bring children into cheerful surroundings, to assist them to good health, and to teach them how to get along together in their play life which after all will be good training for their work life, later on. Its business is concerned with providing interesting, wholesome, constructive, and cultural activities in which people may spend their leisure time and develop richer and stronger personalities.

RELATIONSHIP OF THE TEACHERS' OWN PROFESSIONAL CONSCIOUSNESS TO THE CAUSE

CARL L. SCHRADER,
Professor of Physical Education,
Ithaca College

Loyalty means a relationship to, and when defined in its basic manifestations, begins with one's self. One has to be loyal to self before being loyal or related to outside. Professor Royce in dealing with the philosophy of loyalty speaks of, "Being loyal to loyalty," which interpreted means the relationship of our own loyalty to that of others, either persons or causes.

With the strategical position assigned to the teacher, that of the link between pupil and life, this loyalty is a prerequisite to fruitful service. A teacher must believe that the outcomes of procedures he or she promulgates and practices are possible, until such a time when he or she is forced to believe otherwise, when of necessity procedures must change. "Be not the first by whom the new is tried, nor yet the last to lay the old aside."

Opinions of others, no matter how eminent the source, should serve as guide posts only, never as hitching posts. Diesterweg, the German philosopher and pedagogue, stated this thought many years ago as follows: "Method and system are of value mainly to him who conceived them."

A teacher must get his conviction for procedures from thinking about them and from observing outcomes. The former Deputy Commissioner of Education in Massachusetts laid down three cardinal questions a teacher should ask himself: What am I going to teach? How am I going to teach it? Why am I going to teach it?

What am I going to teach? What a challenging question that is in preparing the work for the day or week, month or year. Yes, what? The selection cannot be a promiscuous one, at least not when we think in terms of education rather than of training. In the wealth of materials at our disposal perhaps lies a great danger, for the untrained teacher at least. To the well-trained and thinking teacher this wealth opens up endless opportunities and approaches to meet the individual and varying needs of pupils. It is not a matter of catering to the already existing tastes so much, as to introducing pupils to new experiences and exploits, that awaken new interests, tastes, and desires. The teacher's own taste must be kept in the background, instead of being paraded and forced upon pupils. After all "It is the taste of the fish, not that of the fisherman that determines the bait."

The selection must be a balanced whole, one that meets the general educational objectives as well as those laid down for our specific phase in education. Professor LaPorte's clear and short statements under the heading "What is Physical Education," are in point here:

1. Physical education is no longer considered as a trailer or addendum to education, but as an integral part of education.
2. It is no longer a subject in education, but a field of education.
3. It is no longer an educational *child,* but an adolescent *youth.*
4. It is not a "system" but a definite method of education through muscular and emotional experience.
5. It is not a "panacea for ills," but a combination of specific media for securing various results.
6. It is not a mischief-preventive, but a stimulating form of leisure time expression.
7. It is not an energy-release mechanism, but a developer of character and moral traits.
8. It is not merely an exercise medium, but a method of developing poise and power of self-expression.
9. It is not a promoter of military precision, but a developer of intelligent leadership.
10. It is not a health insurance, but is a valuable aid to health.
11. It is not a mere physical developer, but a promoter of fine adjustment between physical and mental.
12. It is not merely an athletic battle of brawn, but a test of wits in physical-social competition.
13. It is not a stimulant to emotional frenzy or explosion, but to the development of emotional stability under pressure.
14. It is not a menace to life and limb, but a developer of safety skills.
15. It is not merely a preparation for adulthood, but a training for good citizenship now.

This selection of what to teach can only be made by taking into consideration the numerous factors which after all make teaching intelligent. It can not be too often stated that the required physical education period is one of instruction and not for the playing of highly organized games. The playing of situations of games naturally is good teaching.

A well planned and constructive period of physical education carries with it a large measure of recreation, yet to consider the period solely one of recreation, may be convenient, but falls short of the intent of physical education.

Each period should represent a balanced lesson, and a definite continuity of logical progression should be decernible in all parts of the whole pro-

gram, not merely through the year, but through the entire school life.

This will not, or need not be pedantic, if the teacher is master of all materials.

Age of pupils, size of group in a given space, time available, equipment, etc., are only some of the factors aside from educational needs, that enter into determining what shall be taught.

Each phase of the daily program should make its contribution to the desired outcome as a whole, whether it be conditioning exercises, games, dancing, sports or exercises upon apparatus. Any one of these alone would be specializing, which has no place in an educational, developmental program.

Body movements that are corrective, are also preventive, hence need a place in the program as conditioning exercises for all, and are best placed in the beginning of the period.

Much has been accomplished in weeding out meaningless and merely possible movements, so that only developmentally effective exercises should be selected. This development may be in any of the many phases in education.

A complete and balanced program comes into play only when, after the brief preliminary mass work is over, the class is divided into small sections of preferably not more than ten, in each of which a specific piece of teaching, planning, and practicing goes on, and to which all in turn will be exposed.

Such a program embodying a great variety of fundamental activities needs thought of content as well as of administration. To have a small group playing for a short time, with succeeding groups taking their turn, leaves the remaining ones sitting about idly. It takes considerable stretch of imagination to believe, that those not engaged in actual play are thinking deeply of the fine points of the game.

Such class management does not constitute an acceptable teacher load, nor does the question, "What am I going to teach" enter in, for it is usually the same thing for each class day after day. We have at our command excellent literature from which to select program content and from which to glean valuable hints as to procedure. But in visiting classes one is impressed with the apparent poverty of types of activity and void of method, and naturally enough, a lack of keen interest or anticipation on the part of the pupils. The joy of planning as well as of teaching is missed by many a teacher.

It is not sufficient to merely rest the choice upon physiological ground and findings, important though they are. If we accept the slogan that we must teach the whole child, then surely we must seek to have the soul share in the endeavor sought. Of great importance for the ultimate experience of any form of activity is the kind and extent of psychic participation in the doing.

In the physiological experiences there is to be found a marked difference between those movements that provoke the joyful note and those that result in dullness or joylessness. It has been shown "that a feeling of dislike causes a contraction of the peripheral blood vessels, and thus an increase of blood pressure. Also the respiration and pulse frequence is lessened. On the other hand, that activity in the garb of pleasure and joy manifests itself in an extension of those same blood vessels as well as a lowering of arterial tension, breathing is deeper and the pulse is quieted."[1]

Guthsmuths may be quoted here most expressively in his classic statement, "Physical Exercise is labor in the garb of Youthful Joy."

Considerable searching, thought and deliberation can be and should be devoted to this one question—What am I going to teach?—alone.

The second question of equal, if not more importance is, "How am I going to teach it?" There must of necessity be a definite plan of approach. Not definite in the sense of routine, but definite in the sense of logical sequence in progression, and definite in its aim to the goal set. This logic of sequence need not, or should not be interpreted as meaning a series of steps in learning for a whole class as such. An interpretation of this sort would mean having all members of a class go through all the steps, whether they needed to or not. It does mean, however, that each one should be aided toward the final successful achievement in a way that would insure a permanent successful achievement, rather than an occasional and merely accidental one.

To make this clear: A class should be introduced to a new task, be it a dance, a stunt, a game or an athletic event, in its complete form, say by means of illustration. Then the individuals are given the opportunity and freedom to do it as best they can. The result will appear in all grades of crudity, but the desire to be able to do it will have been created and refinement now logically follows.

In this refinement the logical sequence of the learning process comes into play, and the results become better and better on the part of all, and become best with the usual percentage of individuals. Reverse the process and you have the school of old, where the fine details were taught first in a pedantic way, with the final and alluring task somewhere in the offing. The connection between these details and the eventual complete task was rarely understood by the pupil, and the joy of doing was postponed to the last. There is joy in doing a new stunt even poorly, and the joy increases as the performance gradually becomes a more finished product.

A statement made by Lord Chesterton that, "Anything that is worth doing is worth doing badly" is not far from accurate.

It is a mistaken notion that only a record breaking performance gives that soul stirring thrill to

[1] Matthias, Eugen.

either performer or spectator. The time element in a race for example has no bearing on the thrill that an audience manifests in loud cheering. The cheering is all over before the time is announced, which may fall far short of record time, so that the basis for the thrill is to be found in the close finish and not the time element. Both the performer and the crowd have had their thrill before learning the time.

The human body is the greatest medium for outward expression and commands the greatest variety of vehicles through which to do it. Who has not been thrilled as spectator by the marvelous and beautiful performance of the skater, gymnast, dancer, skier, equestrian, runner or player. Even mere illustrations give us that thrill. But this spectator thrill is as nothing when compared with that of the performer, a feeling that can not be described, but must be lived, must be experienced.

Here is living, for moments at least, in ecstacy. The whole being throbs in this glow of achievement. This throbbing of life exists in all degrees and in all levels of achievement and efficiency in a thousand fold variety of activities, and may well be termed "condition of the inner man."

Who is there to determine what the specific activity shall be? That decision of choice each individual must make for himself and can be based only on an apprenticeship, which the school must have offered.

To stimulate ambition toward these experiences, on ever higher levels, surely is worthy of a place in education, and surely is helping youth to grow. It is a growth not merely in knowing, but in doing, not merely in health but in total personality. "What I am, I have become, what I am going to be, I am becoming."

What takes place between the first crude and faulty attempt, and the later refined result is based upon teaching, and it would seem that this would offer the best measuring rod for recording achievement, both for pupil and teacher.

To measure, you have to have two points, one to measure from, another to measure to. The first crude attempt in anything from the technical activity to the first exposure to social behavior, is a logical point from which to measure. The later periodic and more refined attempt and achievement, refined both by intelligent teaching and intelligent practice, is the point to measure to. Such a plan shuts out herd education and pedantic teaching, and in the best sense of the word deals with each individual according to his "nature and his need."

Professor Burnham speaks of the learning process as, "First a task, then a plan and then freedom." The freedom that Professor Burnham has in mind is not of the sort that one finds quite generally now in gymnasium and play field, void of all restraint, discipline and dignity. He still believes in teaching. Different than of old—yes. Void of discipline—no. A reaction is setting in against this softening in the training of our youth. Voices are being raised as a warning against this shirking of disciplinary responsibility, and the tendency of catering too much to the so-called interest of the pupil. Entertaining has taken the place of teaching.

Life is not that way! Likes and dislikes make up life in all its shades and serve as a balance. It is the teacher's function by means of the art of teaching to create a liking and interest in known worthwhile things and attitudes that upon first acquaintance and impression may be distasteful, and on the other hand create a dislike for things and attitudes, known to be questionable or worthless, even though there is a liking and interest in them upon first acquaintance. A same blend of the two ideas, the one, that effort will follow interest, and the other that effort begets interest, must point the way out. Either one alone is false philosophy. We are dealing here with a situation which, like many others, will never be solved by the brief answer "either," "or," but rather by the more elastic answer of "as well as." It becomes apparent that much keen and constructive thinking must be devoted to this question of "How am I going to teach it."

There is still the third question, perhaps more weighty than the other two, namely, "Why am I going to teach it?"

In order to answer this question, all of the theory we waded through while in training, and all literature pertaining to education in general and physical education in particular, plus of course experience, comes into play. It is not an unreasonable question for anyone to ask of a teacher, why do you teach that, or teach it that way? It does not follow at all, that this question is asked in an unfriendly spirit. Purposeful teaching must have a *"why."* Merely *"because,"* naturally cannot be the simple answer. There is no one answer to be sure, but an answer must result, even if the teacher asks it of himself. An answer will result, if the teacher applies his knowledge acquired while in training and digested while in service. Obviously no choice list of answers can be supplied the teacher in any form or test. Professional thinking, professional discussion and above all professional reading and study will render the proper answers to this question.

Physiology of exercise, one of the most basic studies in our field has advanced markedly in recent years, both here, and abroad. Yet there is little evidence of much or any of the knowledge gained having weighed heavily upon the activities as such, or the teaching thereof. Program content does not bear evidence of having been influenced by this new knowledge. We have been more interested in measuring results, than we have been in the means toward achieving these results. We are still satisfied in merely meandering midst high sounding phrases such as, "the individual needs," "the whole child," "the boy before the game," etc.

May this not be due to the fact that the two, namely, the practical and the theoretical, are treated as isolated units, rather than as one complete whole?

Inasmuch as our particular field will always have to look for its laurels in the realm of doing, and since this doing must be founded upon such bases as to make the results safe, yet effective, it should require no argument to declare, that only upon definite findings should program construction proceed.

To have the knowledge gained in laboratory and research, merely paraded on the lecture platform or in books, is not likely to be of profit to him, whom we teach. If our doing is bent more on satisfying tradition than on satisfying proven facts, we must not expect much enthusiasm from progressive educators.

To condemn or approve any of the types of activity merely upon our personal insignificant prejudice, can hardly be called progressive. Having practically eliminated from the program activities upon apparatus one might ask at what price?

Our program today, barring exceptions, calls into play solely the pelvis and lower extremities and leaves out of the picture thoracic and upper limb development. The notion that a play and athletic program develops the whole body has still to be substantiated by actual results.

It should be of interest to bring to attention in this connection the findings of a study by Godin on one hundred boys between the ages of fourteen and eighteen, carried on for a period of four years. In this study Godin made his starting point, "Clear cut between the development due to spontaneous evolution of growth and the development due to exercise." He gives in addition to weight, height changes, girth and diameter measurements of chest, pelvis, arms, thighs, forearm and calf, showing the difference in growth between gymnast and non-gymnast. The findings are exceedingly interesting and challenging and need be read in full rather than be quoted here in a spotty way. They show that in every measurement, whether size or efficiency, that the group merely engaged in play and athletics was inferior to the other, which engaged in a balanced program under expert instruction.

Is it not significant that the free play and other outdoor activities did not deliver these boys as physically fit? And yet we have deliberately thrown into the discard the medium calculated best to answer for these shortcomings. We condemned perhaps the means when we should have condemned the teacher. "There are no bad means, there are only bad masters."

Since physical education in the elementary schools is still straight-jacketed in the classroom between fixed desks, it requires a good deal of pioneering and ingenuity on the part of a supervisor to carry on a fairly consistent program.

A strange paradox presents itself when superintendents of schools manifest alarm over findings which stamp fifty, sixty, or even eighty per cent of the children as of poor posture, and insist on something being done for these children to correct these shortcomings. Then we in turn prescribe for these children (fifty, sixty and eighty per cent of them) those same types of exercises, which we have deliberately discarded from the program as useless. As stated elsewhere, exercises that correct, also prevent and conserve.

To select merely one of many factors that play a part in the basic field of biology, and proclaim it as an all saving device and guide of safety in the activity field, is following the course of least resistance. The reason for such procedure often given, that it is at least a move in the right directions is painful, and is only likely to leave the impression of charlantry.

Evaluation of types of activities, especially an evaluation of types of activity for distinct types of humans, is vastly more significant than classifying human beings according to similar achievements. The effects of exercise upon vital functions and upon structure always must be the determining factor in reaching what we choose to call vital capacity. It was this realization which undoubtedly led the early advocates of Swedish gymnastics to found their system, on what may now be said to have possibly been too pedandic or one-sided. Yet, it was an endeavor accurate in many instances. Much of our teaching material now, however, seems to be free from any well based reasoning and planning. What of the personality and social bearing of the teacher?

It is not intended that any teacher should bear the semblance of a saint. That might well suggest being out of touch with life, and in order to lead in living one must share in living. It does mean, however, that a teacher, particularly in physical education, must recognize that he teaches by what he is and does, and that following him or her must be safe. A teacher must not offend her profession by practices that are frowned upon nor offend social customs even if they are only local. Tact and tolerance need be practiced, more in small communities than larger ones, where one's identity is lost in the mass. A successful teacher is one who is recognized by the profession and accepted by the society in which he lives. He or she cannot afford to ignore either, loyalty forbids.

These are at least some if not the most important characteristics which the teacher of physical education should possess in order to serve best. These possessions lift teaching out of the realm of a job and stamp it a profession, a science or even a calling.

The code of professional ethics, arrived at by a committee, of which Dr. Harry Scott was chairman, and which was accepted by the American Physical Education Association, will aid in a finer conception of our task.

PHYSICAL EDUCATION IN THE ARTS AND SCIENCES COLLEGE

MERWIN E. POTTER
Professor of Physical Education and Head of the Department
University of Kentucky

There came to my office recently a young lady who stated in a rather subdued voice, but more or less emphatic manner, that she wanted to "major" in physical education. The commonplace questions revealed the following:—that she was a "second semester sophomore"—she had "a standing"—she had been enrolled in the College of Agriculture—she had planned on majoring in "Home Ec" when she first entered the University—she liked sports and dancing—she was not particularly interested in teaching when she finished her college training although she "thought she would like summer camp work"—she had hopes of getting married "sometime" after graduation—she had been referred to me by the Assistant Dean of the Arts and Sciences College—would I advise her as to what courses to take and did I think she could graduate in two and one-half more years of college work. After a rather hasty check of her scholastic endeavors to date and her entrance tests record, it was a real pleasure to inform this young lady that I not only thought she might expect to graduate in the specified time, but moreover the physical education department would be happy to have her as one of its major students.

For the past six years the University of Kentucky has been offering a major in physical education through the Arts and Sciences College. Needless to say, the program of study outlined to meet the requirements for the A. B. degree through the general college was not, when first introduced, what one would term popular with either faculty or students—especially the former. It took much persuasion—both subtle and direct—considerable argument and debate, and the ever present guidance, counsel and enthusiastic encouragement of an understanding Dean to establish such a major. For who will deny that it is something of a radical departure to award the degree for work in physical education, which is comparable to the one awarded by the Liberal Arts College for work in the pure sciences, philosophy, the arts, languages, literature, and mathematics? The following quotation taken from the report of "the curriculum committee" is disparaging evidence as to the attitude that prevailed in the faculty group. In such instances, the "curriculum committee" passes on all new courses, changes in courses, and recommends action to the faculty group. Although the tone of the following is little short of derogatory, it is significant to note that "the course" was recommended and approved.

> "In regard to Physical Education 32, we found after consulting the dictionary that Equitation meant just plain horseback riding. Mr. H. ——— of the Department of Physical Education appeared before the Committee and explained that this course was desired because of a request of a group of women students of the University who had been taking a beginner's course. . . . Since Kentucky is noted for its fine horses and beautiful women, the Committee felt that it was appropriate for the women students to meet one of their physical education requirements by pursuing the equistrian interests rather than by playing basketball or some other sport. We are, therefore, recommending that the course be approved, but that the title be changed to Advanced Equitation."[1]

To some physical educators the implications of the above statement represent something approaching contempt and disregard for the significance and values of physical education. From another viewpoint there is nothing unusual, for after all, the proposed procedure represents a decided change and something of a breakdown in the established customs of the well entrenched Arts and Sciences program. Perhaps the most astonishing item about the whole business is the fact that an Arts and Sciences faculty would even consider such proposals and further that a departmental staff of physical educators would have the temerity to offer such for consideration.

From the student standpoint, the course was not popular due largely to the fact that it prepared one—in the student's opinion at least—for nothing. In other words, the concept that physical education courses in college are either "required courses" or "teacher training courses" had permeated student thinking to the extent that as a student, you simply do not take physical education as a major unless you want to teach, coach, or be a playground worker. Here was a program of study in physical education which in brief said that one could, by following the prescribed curriculum, get that sort of education which the Arts and Sciences College stands for, namely:

> "The aim of the College of Arts and Sciences is the training of the individual student as thoroughly as possible in the four years in the directions of his interest and powers, in order that he may lead a happy and useful life and contribute his share of leadership in social, intellectual, economic and political advancement."[2]

[1] Minutes of the University of Kentucky Senate, 1937-38. On file in the Registrar's Office, University of Kentucky, Lexington, Kentucky.
[2] General Catalog, University of Kentucky. 1939-40, p. 40.

Although we in physical education have been saying, among ourselves, at least, that physical education contributed to many of the essentials of the good life and complete living, yet other than the "service courses" and "required gym" what have we been doing to provide students with an opportunity to use physical education as a medium for the preparation of after school living? If the usual one or two years of required service courses have something to offer to the educational experiences of a college under-graduate does it not seem reasonable to assume that a "major" in this field might contribute to a well rounded liberal education? This was the premise on which the program was organized. The results cannot as yet be completely or accurately determined, however, there are certain indications which appear to be significant.

The Arts and Sciences major in physical education is increasing in popularity with the students; there are more and more women as well as some few men students who are following a course of action not greatly different from that of the young lady mentioned in the opening paragraph. Students in universities may be classified into two main groups: those who come for a general cultural program of training and those who come for specific vocational or professional training. The usual major program in physical education is designed for this latter group; these matriculate in the teachers' colleges and are preparing to enter the profession of teaching. The one outstanding thing that the Arts and Sciences students were not interested in was the teacher training program, hence it required some modification of the courses that were offered for the teacher training group as well as certain new courses with an appreciable change in course content.

It appears that at least three groups of students are finding this program satisfactory for their needs. First, there is that group who are in college for the primary purpose of getting a liberal arts education, a general cultural training and who have no immediate desire to use their four years of undergraduate work for professional training. Second, there is that group of students, not many in number, who are planning on using their undergraduate years for training in the basic and fundamental sciences with the idea of preparation for advanced graduate study and research. Third, there is the group who are below average in aptitude or ability, or perhaps both, who will spend from one to two semesters or possibly three years in college and for whom the greatest contribution that a college education can make is in giving them something of an appreciation of the arts and humanities. There is justification for the question as to whether this latter group should even be in college, but regardless of the ultimate decision on this issue, the fact remains that some are with us.

In the case of the first group mentioned above, the Arts and Sciences major is drawing a group of students who heretofore would have had little or no contact with physical education, other than the required service courses. What is it doing for them? Is it meeting the aim of the college as previously stated? Again accurate and complete results are not available, however, a few indications are worthy of note. The course of study is providing training for a certain group of students during their four years of college life in the direction of their interests and powers. There are certainly some students in every Liberal Arts College who have an interest in physical activities, sports, dancing, gymnastics, social recreations, etc., who do not wish to prepare themselves to be teachers of these activities. It is to this group that the Arts and Sciences major in physical education offers a procedure for a liberal four years of college training leading to the A.B. degree. The curriculum is not burdened with "requirements" in physical education courses, in fact there are but few specified course requirements; ample opportunity is provided for individual choice of course work.

The second group of students, those preparing for advanced graduate study and research work although not the largest is in some respects the most interesting. If this curriculum were not available, these students would be in one or two other training divisions; the majority would probably be following the teacher training program preparing to teach on the secondary or elementary school level or they would be following some other major curriculum in the Arts and Sciences College and hence preparing to do research or graduate work in some field other than physical education. Graduate students in physical education at the University of Kentucky who have had four years of undergraduate training in the liberal arts and sciences have shown beyond reason of doubt that they have greater aptitude and better preparation for high grade graduate and research work than the student who has followed the professional teacher training program as an undergraduate. There is some evidence to suggest that in too many instances graduate work in physical education, for the student who has majored in physical education through the teachers' college, simply amounts to a fifth year of college work. Perhaps this is as it should be, but if graduate work in physical education is to achieve the recognition it desires or what is more important if it is to contrbute to the advancement of physical education the graduate and research work of students in this field can well afford to show improvement. Research is dependent on fundamental training in, and working knowledge of, the sciences and a utilitarian and comprehensive knowledge of the arts and humanities; this the average major in physical education in the teacher training division does not get. For these students who show marked ability in research techniques and an aptitude for scholarly achievement, the undergraduate major in physical education in the Arts and Sciences College will be

a medium for thorough and sound preparation for advanced graduate study. It will take some of the better students from the teacher training program, but it will prepare these students to do better graduate work.

The third group, those students with low ability for college work will be removed from the teacher training curriculum and hence the level of work for those interested in preparing to teach physical education will be raised. In most institutions offering a major in physical education there is one of two procedures followed regarding this group of low ability students. They are either dropped from the teacher training program completely and told to seek some other major or they are "carried along" until they eventually eliminate themselves or manage to graduate by meeting the minimum in requirements. By placing this group in the general college division and letting them major in physical education they are not "cluttering up" classes composed of those more serious minded students who are intent on preparing to teach and what is perhaps of equal importance they have a chance to get not "professional training"—which most are not qualified for—but general "cultural training" which is what most of them need.

How does the curriculum of study for majors in physical education through the Arts and Sciences differ from that of majors through teacher training? Probably the greatest difference is to be found not in the respective courses, but largely in the point of emphasis and aim. The teacher's college is concerned with training undergraduate students to be teachers—professional training in its most refined form. The courses are concerned with administration, organization, methods, materials, techniques, pedigogical philosophy and certification requirements. The ultimate aim is to make of the student "a teacher"; a teacher who of course is a good and contributing citizen but still, "a teacher." Contrast this with the aim of the Arts and Sciences College, as stated above, and perhaps one gets the clearest understanding of the difference between the two curricula. Another basis of contrast is found by comparing the degree requirements of the respective programs of study. Students majoring in physical education through the Arts and Sciences College meet the following:

In the lower division:

English, 6 to 12 semester hours credit.
Foreign language, 6 to 18 credits.
Social studies, 6 to 12 credits.
Mathematics, philosophy, or psychology, 6 to 10 credits.
Physical Sciences, 6 to 10 credits.
Biological sciences, 6 to 8 credits.

In the upper division:

A student is required to gain 40 credits in a "Field of Concentrations. *These 40 credits are selected subject to the student's adviser and the dean of the college and must be in courses not open to freshmen. Fifteen of these 40 credits must be in physical education courses.* Additional required courses are: six hours in anatomy and physiology, three hours in child psychology, and three hours in modern social problems. During the senior year the student must pass a *Comprehensive Examination* in his major field.

It does not take much imagination to visualize how this program of study can be adapted to the student's interests and powers. For the student with marked ability for scholastic work, the program can be arranged to prepare him for advanced graduate study and research of a high calibre; for the student in the lower deciles of aptitude and ability, appropriate adjustments can be made which hold to all degree requirements. Obviously the success or failure of such a program is closely related to guidance and counseling techniques. When these requirements are compared to the requirements in the average teachers' college with all its specified courses in physical education, professional education, first and second majors and minors, it is easy to recognize considerable difference between the two.

Perhaps the best criteria of the program is to consider the status of students who are now following the curriculum as well as those who have completed it. It can be said that students following this program are, according to scholastic records, those students who have better than average ability for scholarly achievement. More students following this program of study make high scholastic standings, achieve recognition in honor societies and campus leadership organizations than is the case of those majors in the teacher training program. The earning capacity of the graduates from the Arts and Sciences course for physical education majors is appreciably higher. Graduates are employed in social, governmental, and industrial fields such as recreational leadership, camping, counseling and guidance work for students such as deans of men and women, personnel work in industrial plants and public institutions and public relations and promotion work for social and industrial agencies.

The greatest contribution that this more or less novel "major in physical education" can make, will be to turn out college graduates who will be better men and women, more active American citizens and exponents and supporters of the concepts and ideals of physical education. Certainly it is putting a few men and women into fields of human endeavor other than teaching, who have perhaps caught something of the philosophy for which physical education stands. Perhaps the time is not far distant when certain of these individuals can serve and champion the cause of a wholesome and complete physical education program for every child, youth and adult in America.

PHYSICAL FITNESS—WHOSE RESPONSIBILITY?*

WILBUR C. DE TURK,
Olney High School,
Philadelphia, Pennsylvania

There is some difference of opinion as to how much the public schools of this country should do or can do toward keeping the nation physically fit. What should be the function of the public schools in reference to physical fitness? How much responsibility, if any, should the public school physical education programs assume for the present draft examination results?

The schools through all members of their staffs and the Boards of Education must awaken the public to the needs of the schools if effective physical education, as a means of obtaining national physical fitness, is to be developed. This awakening should include an awareness of the need for corrective and remedial physical education. Also an increase in health education will do much to develop a better understanding among the pupils as to the need for prompt attention to their individual physical needs. Health education, then, must be considered a necessary adjunct to a physical fitness program.

To assist in developing this physical and health consciousness in the public, educators should be willing to lend their support in the development of the necessary leadership. After all, it is the privilege as well as the duty of all educators to lead the public in the desired direction if physical fitness is to become a nationally supported project. Too often the lack of such leadership (assistance) has lessened the effectiveness of the physical and health education program.

With educators in general, and physical educators in particular, cooperating to inform the public of the needs of the schools for this phase of education, it is reasonable to assume that increased time allotment, personnel and facilities for physical education will result. This increase would permit an enlarged and enriched physical and health education program to become prevalent in the public schools. In this way, an opportunity would present itself to bring about a reduction in some of the physical defects discovered in the youth attending the public schools.

If this physical fitness awareness had been sufficiently developed during the years following World War I, it is altogether possible that the number of physical defects appearing now would be greatly reduced.

A letter from the National Headquarters of the Selective Service System under date of October 1, 1941, sent by Major Ernest M. Culligan, Specialist Public Relations Officer for General Lewis B. Hershey, Director of Selective Service, contains the following:

"Complete data with respect to the physical fitness of selectees is not available at the present time . . . but the following is based on the major defect or principal cause of rejection."

The largest percentage of rejections of the present selectees has been due to dental defects—18.8%. (As of 10/10/41—188,000 or 20.9%.) If adequate health education in reference to care of the teeth and information regarding nutrition—pre-natal and post-natal—had been given to the parents of the selectees this major group of defects would undoubtedly have been less. A better understanding of the nutritive needs for developing good teeth in the growing child would have reduced the number of caries and consequently would have prevented the removal of teeth which are needed for "self-defense" as well as for "National Defense." The economic loss due to dental decay and the resultant ills would have been reduced, too. Sufficient health information, however, is not the only avenue by which we can approach the solution to this physical fitness problem. An adequately staffed school medical and nursing department would permit more frequent and more detailed routine physical examinations. With the opportunity for the necessary check-up and follow up this staff would materially assist in reducing the dental defects as well as other defects.

The second largest group of rejected selectees—11.1%—(As of 10/10/41—123,000—13.7%) have eye abnormalities. The school can aid in reducing that percentage by making certain there is correct and sufficient light—natural or artificial—for all pupils in all class rooms. Insufficient or inadequate lighting will cause eyestrain and repeated eyestrain will lead to abnormalities. These conditions may involve the eye to such an extent that adjustment and correction is rather difficult. A pupil having sight below normal, whether this knowledge is relayed to the school from the student's family physician, or whether it is discovered through school medical inspection, should be so seated in every classroom that further eyestrain is minimized. If the school finds a pupil in need of glasses and the parents unable to purchase them there are agencies which will assist the child in need. No needy child is forced to continue being handicapped by abnormal vision. If diet deficiencies are found to exist, it is possible to prescribe changes which may correct defects.

* This paper was prepared as an adjunct to a panel discussion held in conjunction with the Secondary Education Conference of the Pennsylvania Secondary School Principals Association, Harrisburg, Pa., October 30, 1941.

The cardio-vascular defects — 9.3% (As of 10/10/41—96,000—10.6%) are next. If a student is able to attend school *at all* he should be able to participate in some form of physical activity. The pupil's roster of activities would have to be adjusted to fit his peculiar needs. Through supervised participation some beneficial results could be achieved. This rostering of pupils into "special" physical education classes is in practice in some of the high schools in Philadelphia. Too often pupils of this group are rostered to study hall without being given a roster assignment for some kind of physical activity. This is an undesirable procedure and does not meet the needs of the pupil handicapped by cardio-vascular deficiency. Cooperation between the doctor, family or school, and the school nurse is essential. Through examinations and repeated checks the plan of procedure should be agreed upon by them in order that the desired results can be obtained for the pupil.

Musculo-skeletal rejections—7.7% (As of 10/10/41—61,000—6.8%) are listed next. With the present time allotment, personnel and facilities available we have scarcely sufficient allowance to meet the needs of the normal individuals without endeavoring to conduct corrective classes. The actual time available for instruction, after taking time out for dressing and showering, is so limited that little, if any, individual instruction can be expected. To enable a physical education staff to give individual attention to those needing it an increase in time allotment, personnel and facilities is necessary. Additional time allotment for health education should also receive consideration. A better understanding of the structure and functions of the body plus repeated stress on health habits will tend to develop an awareness of health needs. An increase in health education time allotment has recently been given in the senior high schools in Pennsylvania, and, although this increased emphasis has been in force but a short time, there are definite indications of an improvement in pupil health consciousness.

Mental and nervous conditions have necessitated rejections totaling 7.1%. (As of 10/10/41—57,000 6.3%.) These rejections are undoubtedly due to various underlying causes which are beyond the immediate province of the school. For example, the inherited tendencies toward these abnormal conditions may involve not only the present generation but previous ones, too. The fundamental nervous system may have deficiencies which cannot effectively be treated in routine school life. Through prescription of natural activities and a roster adjustment to fit the needs of pupils in this group we can develop a program of some value. In order to have a better understanding of the reasons for the abnormal mental and nervous conditions we should know rather definitely the child's home life, the nourishment received as to kinds and amount, his associates, his after school activities, his school problems and differences if any. The aforementioned as well as any other circumstances having an influence on him should be considered before an adjusted physical education program can be planned.

Rejections for ears totalled 5.5%. (As of 10/10/41—51,000—4.6%.) Here again we must consider the underlying causes for the particular rejection. Is the condition due to an illness, an accident, carelessness on the part of the child or the parents, lack of knowledge or lack of instruction regarding cleaning or was there faulty bone formation of the auditory area through inheritance or inadequate pre-natal care? The school, through routine examination may learn of certain auditory defects, but the correction or needed adjustment will have to be made through the home. The school can only suggest or recommend certain procedures to prevent more serious difficulty—it cannot go beyond that point.

The 4.4% rejections for hernia, perhaps, could have been reduced. If sufficient physical activity involving the use of the abdominal muscles had been indulged in more frequently and more vigorously a better musculature for the abdominal viscera would have been developed. While the present selectees were attending secondary school and institutions of higher learning adequate activity would have developed the necessary musculature and reduced the frequency of rejections for this defect. Perhaps the selection of activities should be determined by the contribution made to the development of the abdominal region. At the same time we cannot overlook the part adequate nutrition plays in building strong tissues. The home and its economic ability to purchase the needed foods has an important role in reducing hernia rejections.

Defects of the lungs, including tuberculosis, necessitated rejecting 4.1% (As of 10/10/41—26,000—2.9%) of the selectees. Once again the economic stability of the family and the home environment of the student are predisposing factors in this group of rejected selectees. Insufficient food or food low in Vitamin D content are also contributing causes for lung defects. Accordingly, the impairment, due to those causes, may be in an advanced stage before the school physician discovers the pupil's condition. A thorough physical examination of all children entering the first grade would greatly assist in learning about these defects and would materially reduce the number of later exclusions for various pulmonary conditions. The schools, in addition, could provide milk and other needed nourishment in those areas where the economic standard would indicate the possibility of a high rate of pulmonary infections. A municipal or school summer health camp for the under-privileged

should also be given consideration. Adequate health information from the school plus film and lecture presentations by various agencies presents another avenue of approach to the problem of reducing pulmonary infections.

The feet were involved in 3.2% of the rejections. This group was the lowest in rank according to the findings as indicated in the letter from General Hershey's office. Undoubtedly, the major portion of these defects was the result of ill-fitting footwear. The opportunity to have at least two pairs of shoes to permit alternation in wearing is a desirable phase of foot hygiene. The families of limited economic means, however, cannot afford this and consequently their children will have to depend upon adequate health information relative to the care of the feet and the procedures necessary to insure a long useful life for the pedal extremities.

While considering the various defects of the selectees, and what the public schools can do to help avoid repetitions of these conditions, due consideration should be given to the important role of the school physician and school nurse. They can play an outstanding part in helping the physical fitness program if their sphere of activity can be enlarged. For example, a certain high school of over 4,000 pupils has a male doctor from nine until twelve o'clock on three days a week and a female doctor during the same hours on the other two days of the week. This time allotment precludes an extensive examination. Although each pupil is given a medical examination sometime during the school year, it must, of necessity, be of a perfunctory nature. The examination includes a surface examination of the scalp, eyes, ears, nose, throat, glands of the neck, chest, heart, lungs, weight, teeth, tonsils, posture and feet. It can readily be seen that the examination, with the time allotment available, must be hurried. Furthermore, the school physician is not permitted to inspect for hernia or venereal infection and is not permitted to take the history of the child or to make a blood or urine test or treat in any way. Thus handicapped he can only recommend and learn the parental response through the school nurse as her records will show whether the parents comply with the suggestions for removal or correction of defects.

Since President Roosevelt is advocating a program to salvage the health of the draftees having remedial defects, why not start a program of prevention by increasing the medical and nursing staff of the public schools so that prevention rather than salvage will be the procedure in the future?

To arrive at some conclusions concerning physical fitness and those responsible for developing it we must recognize three contributing factors—the home, the school and the community.

The home through wise counseling with growing children, the transfer of adequate health information with its daily application, a willingness to have defects removed or corrected and the maintenance of a diet sufficient in amount and kinds to assure the child the needed nutrition will do much to aid this physical fitness program.

The school through an interested personnel—the faculty, the administration and the medical and nursing staff—can, by working as a unit for the best interests of the child, reduce the acuteness of the physical unfitness present in school children today.

The community through some form of socialized medicine and socialized feeding can raise the physical well-being of those who are economically unable to meet the requirements for maintaining an acceptable degree of health and physical fitness.

General Lewis B. Hershey speaking at the National Nutrition Conference for Defense in Washington, D. C., on May 27, 1941, has the following to say:

"Undoubtedly, prevention is always better than cure and far reaching results will follow basic changes which develop our people physically. This is a long range program in which schools, parents, and government must each bear a part. To be successful there must be a thorough-going system of education as to what the situation is, what steps are necessary for its correction, and the individual part that each citizen must play in making these measures operative.

"I believe the most fundamental step must be a basic change in our conception of the nature of our educational system. We must place a decided emphasis on physical training and physical education. Our educational system must place the youth who has developed a perfectly health body on a plane above the scholarship giant who in reaching this goal has ruined his eyes, his digestion, and his health in general. Once we have set up an educational objective of a well developed body, we must organize our curriculum to secure it. This establishment of an ideal of bodily development is basic and necessary, but it is a long range planning item.

"The Selective Service has examined a million physically. The results of these examinations should be disturbing to us as a people—they should energize us to immediate and positive action. Approximately 400,000 have been found unfit—probably one-third of these are suffering from disabilities directly or indirectly connected with nutrition.

"America must be strong, but she cannot be strong when one-half of her sons are sub-standard physically. America needs whole men, not half men. She must develop vigorous and healthy youth; she must *prehabilitate* those whose defects are slight; she must *rehabilitate* those examined and found deficient. The task before us, like all tasks in a democracy, is the duty and responsibility of each and every citizen."

METHODS OF ARTIFICIAL RESPIRATION

(Demonstration of Thirty-eight Methods)

PETER V. KARPOVICH, M. D.,
Springfield College, Springfield, Massachusetts

In lecturing to college students on the pathology of drowning and principles of resuscitation, I have always been impressed by the number and variety of the questions asked during each session. Of special interest are the questions regarding the possibility of an improvement of the officially adopted method of artificial respiration. Quite frequently good suggestions are made. In most cases, however, suggestions are not new at all, and the students are much surprised when they learn that identical methods have been tried before and abandoned many years ago.

I have also been told that many well-meaning persons with an inventive type of mind frequently come to the Red Cross Headquarters in Washington offering a "brand new" method of artificial respiration. It often takes a great deal of tact on the part of the official to let them down easily without making them feel too disappointed.

Yet new methods are still being created. Nielsen invented his method only in 1932. Drinker and Shaw, and also Hederer, suggested their methods even more recently. If, on the one hand, the knowledge of many existing methods may discourage a would-be inventor, that same knowledge, on the other hand, may show another person all that has been and yet can be done. It is possible for an individual to invent a new method just by chance, without knowing much about the other methods, but in most of the cases he is bound to be disappointed when he finds out that what he really did was but rediscover an old forgotten method.

For those with an inquisitive mind, I suggest reading two articles, one by Keith(1) and the other by Fisher(2). Those who know German can get a wealth of information in a book by Eysselstijn(3). Unfortunately these references are not always available. Moreover a beginner often cannot easily grasp the significance of the various manipulations as they are described in the references. An actual demonstration of the method is always more comprehensive and impressive.

For these reasons I have been giving demonstrations of the most important methods. With proper organization, it is possible to demonstrate about 40 different methods in less than one hour. A regular school assembly is a convenient time during which to present such a demonstration, and usually the students respond with attention and interest. At Springfield College we give the demonstration at a Physical Education Forum, where attendance is voluntary, and yet we always have a large audience.

Organization of the Demonstration

A few days before the demonstration I call for "volunteers" from my class in physiology and select about thirty men to assist me. Each man has to be responsible for two or more methods, depending on the degree of difficulty. These men are drilled in the methods they are to demonstrate. Those methods which require special equipment, not immediately available, such as the teeter board or a barrel are just very carefully explained and the men are made responsible for securing the necessary props and practicing with them later. It is a good idea, however, to have *all* necessary props ready the day before the exhibit.*

Suggestions for an efficient demonstration here follows: Mats are placed on the floor covering an area of about 20′ by 20′. Rows of chairs for the spectators are arranged parallel to the three sides of this area. A screen is placed along the fourth side. This screen facilitates any quick changes which might be made as in the demonstration of the last method, "the rocking chair number."

Each person in the audience receives a mimeographed program which includes a brief description of each method. Thus, the spectators may read the description while watching the demonstration and better understand the procedure. A copy of this program appears at the end of this article. It would be difficult to condense it any more, and a preliminary test on the students showed that they were able to follow these descriptions and reproduce the methods with a reasonable degree of accuracy. As a matter of fact, the intention was to give a gen-

[1] Keith, A., The Mechanism Underlying the various methods of artificial respiration practiced since foundation of the Royal Humane Society in 1774; Lancet, Vol. 1, p. 7457, 1909.

[2] Fisher, H. E., The Evolution of Resuscitation, National Safety Council Congress Transactions, Vol. 1, p. 97, 1931.

[3] Eysselstijn, O., Die Metoden der Kunstlichen Atmung, Berlin, Julius Springer, 1912.

* For convenience the props required for the program appended to this article are listed here. The numbers indicate the method as listed on the program. A buck, or gym horse, for No. 5; blanket, No. 8; barrel, No. 10; teeter board, No. 12; table, Nos. 17 and 30; chair, No. 22; piece of cloth (large handkerchief) to tie the hands, Nos. 23 and 37; pole or board 4-5′ long, No. 12; bed sheet, No. 29; rocking chair, No. 38; make-up, wig, beard, etc., No. 38.

eral picture of the evolution of methods rather than to reproduce all the minute details which have no great importance.

It is my hope that this same program may be used in schools, summer camps, or in other public demonstrations and will stimulate more interest in life-saving. It is suggested that the "victims" exaggerate their inhalations and exhalations during the performance so that their breathing may be audible to all spectators in the audience, and the relations between the manipulations and respiratory phases may be observed.

Obviously each lecturer, or rather "director of the show" has his own way of conducting a demonstration. Furthermore, the performance should be suited to the age and educational background of the audience. Besides this consideration, it is ordinarily a good idea to inject a little humor into the procedure, especially since some of the methods lend themselves very well to comedy. For example, when a method required "pulling the tongue," it was suggested that a piece of red rubber be pulled from the victim's mouth instead. On the day of the demonstration, one group used a small elongated rubber balloon, which upon collapse, to the surprise and enjoyment of the audience, made a high pitched, squeeky noise.

The last number, "the rocking chair method," may be presented in this way: The victim should be a big fat man, and the operator a small skinny man, dressed in a big coat, and made to look as old and weak as possible. By way of introduction you might outline to the audience a situation in which the victim is big and the rescuer is a sick, weak old man. Ask them what can be done in such a case. On the signal, from behind the curtain the actors appear. The *victim* carries the operator, places him in the rocking chair, and lies down on the floor in front of the chair. The rescuer puts his foot on the man's chest and begins to rock. Each time he rocks forward he squeezes the victim's chest causing an expiration. In my last demonstration, the operator, acting on his own initiative, had a corncob pipe in his mouth, probably to show how easy this method was. The audience enjoyed this number and it served as a suitable finale. Both the audience and the actors left the hall in high spirits. Yet it is quite possible to put them to sleep with even fewer numbers if these are presented as a sort of historical autopsy.

EVOLUTION OF THE METHODS OF ARTIFICIAL RESPIRATION*

1. *Rolling*. Patient is rolled on the ground.

2. *Marshall Hall* (1856). Patient in prone position. Blanket under the chest. For expiration the operator presses upon the back. For inspiration the operator, grasping patient's shoulder and hip, turns him up to one side.

3. *Bowles* (1856). Modification of Hall's method. Two operators. One works as in the preceding method, the second operator lifts the uppermost arm for inspiration, extending it well above the head, then bringing it back to the patient's side for expiration.

4. *Kohlrausch* (1934). Patient is on one side, legs spread. The uppermost arm is raised above the head then brought back upon the chest.

5. *Jackknife*. The patient is placed over a fence on his stomach, head down. The operator rhythmically brings his weight upon the patient's back, causing an expiration.

6. *Esmarch* (1863). Operator kneels on one knee, placing the patient face down across the other knee. With one hand he rhythmically presses upon the patient's back for expiration and with the other hand he simultaneously pulls his tongue.

7. *Across Horse's Back*. The patient is placed face down across a horse's back, which is then led at a trot. (A man can imitate the horse.)

8. *Tossing* in the air with a blanket. Expiration occurs upon hitting the blanket.

9. *Rolling over a Barrel*. Patient is placed across a barrel, face down, and rolled back and forth.

10. *Rolling inside a Barrel*. (Swiss method). The ends of the barrel have been previously removed.

11. *Inversion*. a) Suspension of the patient, head down. b) Patient placed face down. Operator standing between the legs raises them up to his armpits for expiration so that only the patient's head is touching the ground, then lowers them again for inspiration.

12. *Teeter Board*. Patient is strapped to a board which is then see-sawed.

13. *Le Roy* (1829). Patient is on his back. The operator kneels on one side by the hips, placing one hand on the patient's abdomen and the other hand on his chest. Pressure is brought to bear simul-

* Demonstration given at the Physical Education Division Forum, Springfield College, June 5, 1941, by Peter V. Karpovich, M. D., assisted by the members of the Junior class.

taneously upon the chest and abdomen, causing an expiration. For inspiration, pressure is released.

14. *Cooper* (1829). The same as the Le Roy method, except that the abdomen is squeezed first and then the chest.

15. *Silvester* (1858). Patient is on his back, operator kneels at the patient's head, grasping his elbows, pulling the arms out and up above the head. On expiration the arms are carried back to the chest.

16. *Champney* (1887). A modification of Silvester's method. The arms are brought not only above the patient's head as in Silvester's method, but clear to the ground so that the body arches.

17. *Pacini* (1867). Patient is placed on his back on a table. The feet are either tied to the table or held by an assistant. The operator grasps the patient's shoulders at the armpits, and pulls them toward himself, then releases them.

18. *Bain* (1868). The position is the same as in Pacini's method except that the patient's arms are extended above his head and are grasped by the operator, and pulled up and toward himself, lifting the patient's body. A second assistant, kneeling at the patient's side, exerts pressure upon the chest.

19. *Flexion No. 1* (1871). The patient is on his back. The operator stands between his legs, raising them to his hips. On expiration the patient's knees and thighs are flexed and brought down upon the abdomen. On inspiration the operator makes a step back and straightens the patient's legs.

20. *Flexion No. 2.* Patient is in a sitting position. The operator stands behind. For expiration the patient's body is bent forward until the head touches the knees. On inspiration the body is brought back to the sitting position.

21. *Richardson* (1890). Patient is in a sitting position. For inspiration, two operators, each grasping one hand, raise the arms, lifting the patient. On expiration, the arms are flexed and pressed against the chest.

22. *Rose* (1857). Patient sits on a chair, so that the lower parts of the shoulder blades are at the top of the chair back. The patient's hands are brought to the nape of his neck, where they are retained by one hand of the operator, his other hand being placed on the patient's chin. For inspiration the patient's torso is bent backwards. For expiration patient's torso is bent forward and pressure is applied to the sternum.

23. *Jellinek.* Patient is on his back. Operator kneels at his head, pressing upon the shoulders for inspiration. The tongue of the patient is held by two fingers of the victim's hand which is tied to the victim's neck, with fingers placed in the mouth.

24. *Flexion No. 3.* Patient is lying on one side. One operator grasps his legs, and the second operator his shoulders. On expiration the legs and the body are flexed. On inspiration they are straightened.

25. *Flexion No. 4.* Patient is lying on his back. Two operators. One grasps the legs, the others the shoulders. For expiration the patient's body is flexed as much as possible. On inspiration it is straightened.

26. *Howard* (1871). Patient is on his back. The operator kneels either astride the patient's legs or at one side, placing the hands over the lower ribs. For expiration the chest is compressed. For inspiration the pressure is released.

27. *Van Hasselt* (1847)—*Schuller* (1877). Patient is on his back. Operator kneels at his head. For inhalation he pulls the lower rib margin up. For expiration he releases it. Schuller added to this compression of the chest on expiration.

28. *Francis* (1886). Patient is on his back. A pole (or a board) is placed under his back. Two operators raise the pole thus causing an inhalation. For exhalation they lower the patient.

29. *Dalrymple* (1831). Patient is on his back. A wide and long swath of cloth is placed under the patient's chest and the ends are crossed above the chest. Two operators grasp these ends and pull, thus squeezing the chest and causing an expiration. Inspiration is produced when the pull is discontinued.

30. *Smith* (1890). Patient is on his back on a table. Two operators. One applies Silvester's method, the other Howard's.

31. *Cullen* (1890). Two operators. For an expiration one presses upwards upon the abdomen, the other upon the chest.

32. *Michigan* (1897). Patient is in a prone position. The operator straddles the hips of the patient, and assumes a full squatting position. He grasps the points of patient's shoulders by the clothing, or, if the body is naked, thrusts fingers into armpits, clasps thumbs over points of shoulders, raises chest as high as possible without lifting head off ground. For an exhalation the operator replaces victim on ground, and places his (operator's) elbows against his own knees and hands upon sides of victim's chest over the lower ribs and presses downward and inward with increasing force long enough to count one, two.

33. *Reverse Abdominal* (1897). The same as the Michigan above, except that the patient is lying on his back.

34. *Satterthwaite* (1901). Patient is in a prone position. Operator kneels on the side, embracing the patient's chest with one arm and taking hold

of the patient's tongue with the hand of the other arm. For exhalation he pulls the chest up, squeezing it. For inspiration he releases the pressure upon the chest and gently pulls the tongue. Or, patient is put in prone position, then his upper abdomen subjected to pressure.

35. *Schafer* (1903). a) Schafer, or prone method, you all know. b) Where there are two persons to be revived, lay them side by side, prone on the ground, the heads in the same direction. The operator straddles the two nearest legs, or kneels between the patients at their hips. He exerts pressure first on one patient and then on the second. He increases his rate of movement so that each patient receives 16 respirations per minute. c) Where there are three patients, they are all placed prone on the ground, with the heads in the same direction. The operator kneels astride the middle patient and exerts his pressure on each in turn.

36. *Alabama Power Co.* Modification of Schafer's method. The operator straddles the patient, putting his knees at the victim's knees, and placing his hands below the edge of the victim's ribs. For expiration he throws all his weight possible upon his hands and simultaneously straightens his legs.

37. *Nielsen* (1932). Patient is in prone position. The operator kneels on one knee at the patient's head. For expiration he exerts pressure upon the shoulder blades. For inspiration he slightly raises the patient by the shoulders.

Nielsen: 1—*Schafer-Drinker,* 2—*Schafer-Hederer.*

In both of these methods two operators are required. Expiration is achieved through Schafer's method. Inspiration slightly differs: In Drinker's modification a regular Nielsen's inspiration is used. In Hederer's modification the patient's arms are bent at the elbow; the hands are tied and placed under the face. For inspiration the arms are lifted by the elbows.

38. *The Rocking Chair.* Patient is lying on the ground, either on his back or chest, and the operator, sitting in a rocking chair, places his foot on the patient's chest and rocks back and forth.

THE IMPROVEMENT OF CLASSROOM INSTRUCTION IN HYGIENE THROUGH CORRELATION AND INTEGRATION WITH THE SCHOOL CURRICULUM*

TERRY H. DEARBORN,
Assistant Professor of Hygiene and Physical Education,
Santa Barbara State College

The integration movement, among the recent developments in the school program, is perhaps a natural outgrowth of the correlation method of instruction which has enjoyed considerable popularity during the last decade or two.

To "integrate" is to unite elements with something else, or to form a whole. To "correlate" is to connect systematically, to place in relation to each other, various subjects or parts of the school curriculum. Correlated teaching involves the use by the teacher of procedures for showing the relationship between different elements or subjects, and arranges for simultaneous learning in each. Integrated instruction in hygiene exists when the direct and the correlated teaching of this subject matter are organized and balanced through coordination into a unified program of health instruction.

Correlated teaching is commonly credited with such advantages as the breakdown of the artificial barriers between subjects, the decrease in formality of teaching procedure, the increase in receptiveness of students, the improvement of comprehension by teaching through association, the repetition and emphasis of subject matter in connection with some other subject, the supplying of supporting facts by related subjects, and others.

Certain disadvantages or potential hazards of the correlation method are to be noted. Thus health instruction so presented may be haphazard and without continuity. There may be unwitting repetition. Inaccuracies may result from the instructor's lack of special training in hygiene. When hygiene is taught only through correlation, other hazards appear, such as the difficulty of covering all essential material in this way. A particular danger is that of over-correlation with many subjects, to the detriment of both the health instruction and the subject with which this is correlated.

Contemporary leaders in the field of hygiene and physical education support the correlated teaching

* Abstract of an address presented at the meeting on Nov. 22, 1940, of the Pacific Section of the American Student Health Association, at Fresno, California.

of hygiene. Dr. Walter H. Brown of Stanford has pointed out that there are few subjects in the elementary or secondary school in which suitable health materials may not be used to advantage. Wm. R. LaPorte of the University of Southern California, in reporting the results of nine years of research by the Committee on Curriculum Research of the College Physical Education Association, states that: "Ideally the program (of health instruction) should be a correlated and integrated one, with appropriate materials taught by teachers in connection with all subjects. This is based upon the fact that health is not a separate subject, but rather an attendant aspect of all learning and living."[1] Dr. C. E. Turner of the Massachusetts Institute of Technology writes that: "Not infrequently health may be correlated with other subjects of instruction in a way to add interest to the subject receiving primary consideration, and at the same time to help the pupil see that health is an aspect of living that demands attention in many varied situations."[2]

Assuming our acceptance of correlated teaching and the goal of an integrated program of health instruction, we may now consider its achievement. This will require not only the unselfish cooperation of everyone whose contact with the student offers an opportunity for his health education, but an organization for guiding and coordinating efforts as well. The latter may be provided through an advisory health committee or council dealing with health instruction as well as other aspects of the school health program. The personnel of such a committee would include representatives from those departments making important contributions to health education, particularly such as hygiene, physical education, student health service, home economics, natural sciences and social sciences. The work of this committee may well be promoted through the services of a faculty member well trained in health education, acting as its chairman or executive secretary, and coordinating the facilities and efforts of all teachers engaged in health instruction.

A committee such as that outlined above might attack the problem of improving the classroom instruction in hygiene by conducting a critical and systematic survey of all health instruction given in the school. This will involve a careful scrutiny of the scope and adequacy of subject matter, the materials and methods used, and the qualifications of the instructor, in all courses contributing significantly to health education. The committee will also be interested in important health education contributions made by certain extra-curricular experiences of students, favorable or unfavorable, such as occur in their contacts with the school physician and nurse, the cafeteria, the gymnasium and athletic field, as well as the hygiene of the school plant itself.

It is this writer's experience that such a survey will bring to light many deficiencies in the school's health education program. Useless repetitions will become apparent, as well as gaps left by ommission of subject matter agreed upon by the committee as essential. Those giving hygiene instruction will learn what health subject matter is being given in other courses. Opportunities for worthwhile correlations will appear. Cooperative readjustments under the guidance of the health committee or coordinator, with the development of neglected but fertile areas, and the discarding of unproductive areas, may then lead the way towards a balanced and integrated program of health instruction, in which classroom instruction in hygiene, the correlated teaching of hygiene in other courses, and the extra-curricular health experiences of the student, each makes its special contribution to the achievement of effective health education. In an integrated program, each of these phases is planned to explain and support the health principles, practices and attitudes presented by the others, and to further extend the student's appreciation of health values and relationships.

The integrated program, then, is one in which we may find a hygiene class discussing the care of the respiratory system and the prevention of tuberculosis, while a social science class is perhaps considering the public support of preventoria for the tubercular inclined. Simultaneously, a school assembly may be called to view a motion picture explaining tuberculosis, while the school newspaper may carry an item by the school physician recommending the skin test for this disease, and announcing that the student health service will administer the test to interested students during their physical education period. All of this may be timed to correspond to the annual Christmas seal sale by the local Tuberculosis Association, for further reinforcement. Thus, when properly organized and coordinated, correlation and integration offer rich opportunities for the improvement of school health education.

[1] LaPorte, Wm. R., *The Physical Education Curriculum* (Los Angeles: Caslon Printing Co., 1937), p. 56.
[2] Turner, C. E., *Principles of Health Education* (New York: D. C. Heath and Company, 1939), p. 230.

ORGANIZATION OF A HIGH SCHOOL FENCING TOURNAMENT

WILLIAM F. STROBEL,
William Howard Taft High School,
Bronx, New York

Prior to 1931 there existed groups of young men in eight of the New York City high schools whose interest in fencing came from various sources. The interest was so keen and the foil play so undeveloped, as indicated by the informal matches these groups sponsored, that the getting together of these groups under centralized control seemed a way in which to create a further interest in good fencing.

It was with this in view that the proposition was put before the High School Games Committee of the Public Schools Athletic League of New York City. The idea was favorably received and in October, 1930, entries were called for with the result that at the November meeting twelve schools signified their intention to enter teams in such a tournament. The main task of organizing was the getting of enough volunteer help capable of officiating these matches. Various fencing organizations in the city were contacted with negative results.

The writer was fortunate, however, to have been connected with the College of the City of New York from which institution a group of enthusiastic young men came on Saturdays to do their bit toward the development of fencing in our high schools. Had it not been for the unselfish support of such men, the tournament could never have lived through the critical period. The success of the tournament rests upon the development of an esprit de corps so strong among these volunteers that the continuity of their services requires little attention.

This group has formed itself into an association known as the Interscholastic Fencing Directors Association. Its purpose is to assist in the conduct of the P. S. A. L. tournaments and to do all in their power to improve the status of directing and judging, which always seems to be a sore spot in this sport. More than this, the group is doing all it can to improve the quality of fencing and inculcate the highest ideals of sportsmanship through their alert supervision and friendly guidance.

Centralization of the activity has proven itself most valuable and effective in more than one respect. First of all, it has minimized the clerical work records such a tournament calls for; secondly, the time and place of competition become a set habit, so that the smoothness of its running is thereby assured not only on the part of the contestants, but on the part of the officials as well. Since the safety of the participants is of vital importance, the supervision and constant inspection of costume and equipment of the competitors can be carefully checked. The gathering of all competitors under one roof fosters the creation of friendships among the contestants and finally, the control over a sport by individuals not directly interested in any single group, as well as the absence of local spectator pressure, tends to diminish the strain placed on the competitors when in action in local environment under local supervision.

During the first few years of the tournament a team consisted of three fencers and any number of substitutes. The fact was that most teams were quite fortunate to have three boys who had a fair knowledge of the sport. As time went on the interest grew, and each team came to the tournament with several substitutes who demanded to get into the fray. Some of the coaches and contestants suggested a tournament for a Junior Varsity group, but this was out of the question in view of the fact that we were lucky to have sufficient volunteer help to conduct the one series of matches. Amateur volunteer help is used in compliance with the rule and custom of the sport on the one hand and for financial reasons on the other. Further than that, professional officials would not be available in sufficient numbers to handle the work. There is also a question whether the fine spirit, free from all interest except that in the sport itself, would be nearly as great in a professional group. This spirit on the part of the volunteer officials is one of the outstanding features of the tournament.

To meet this demand for activity on the part of the substitutes, the writer felt it would be best to increase the number of fencers on a team. The composition of a team was hence increased to five fencers grouped into three classes; Nos. 1 and 2; Nos. 3 and 4; and No. 5, based on the ranking given them by their coach. This five man grouping was mainly used to avoid a tie. A study and a season's trial of this arrangement indicated that a sixth man should be added to avoid the strain which seemed a bit too intense for the last fencer. Beside this the last man only fenced once during the entire morning and this seemed inadequate. The next season a team consisted of six men who were as previously divided into three groups, Nos. 1 and 2; Nos. 3 and 4; and Nos. 5 and 6, ranked by their coach in accordance with their ability.

Two changes in ranking are permitted during the season. This change in ranking must be reported to and approved by the director of the tournament. This is done to avoid juggling of the line-up based upon a study of the strength or weakness of a coming opponent. In each group a

round robin tournament is fenced. Although a fencer fences only twice each morning experience shows that it is sufficient physical activity. The other values beyond the physical considerably overbalance this apparent deficiency. For the past five years this plan has been used with marked success and to the satisfaction of all concerned.

The first step taken after the receipt of the entries is to draw up a schedule. Since no competition is worthwhile unless the opponents are fairly evenly matched, the entries are ranked in accordance with their performances during the past two seasons. This of course is only necessary if the number of entries is so large as to require the formation of two divisions. No more than ten teams should comprise a Division because a larger number would extend the season too long. There were seventeen teams entered in the 1941 tournament and the following procedure was followed:

The teams are split into divisions in the criss cross manner (for example: 1-4-7-8-12-etc., and 2-3-6-7-10-11-etc.) and designated as Division I and II respectively. Often it is requested that geographical considerations be given, but this is only granted if the strength balance can be maintained. It would hardly be fair to have the strong teams group in one division and the weak ones in another so that the strong teams would eliminate one another in one division while in the other division, one of the weaklings would finally come into the final round.

Having seeded the teams, the next step is to draw up the schedule. From experience, it has been found that the setting aside of the first Saturday morning for instructional and educational purposes has great value. Talks on the history of the sword and of fencing, a lecture and talks on the demonstration theory and practice of good weapon play, and demonstration of the difficult phases in the rules, a talk on sportsmanship, and finally, a few of the rules of conduct which go into the orderly running of any competition are given.

Cards are sent out to members of the Interscholastic Fencing Directors Association and to a picked number of outstanding fencers of the past season, asking their help in the conduct of the coming tournament. Those able to assist are requested to be present at the opening meeting and to attend the Directors meeting immediately following it. At this meeting the standards of judging and judging problems are discussed in order to bring about a uniform handling of the matches. Most of the officials have fenced in the P. S. A. L. tournament for one or more seasons or have already officiated a season or more and need little instruction. A review of the outstanding considerations is sufficient to bring about satisfactory results.

A dual meet series of matches now follows on successive Saturday mornings until the round robin is completed. Saturday mornings are the best because the volunteer officials are most likely available. The two winners of Division I and Division II and the runners-up are then brought together to decide the team championship, second and third places.

The score sheet (Form I) has been found most reliable as to correctness, in that absolutely no error is made as to who fenced in the case of substitution. Here it will be noted that a column is marked "Form." This means *dynamic form*—style in action, the finesse with which the weapon is handled both on the offense as well as on the defense. The manner in which the fencer bears himself in his bout comes, of course, under this rating, and may be considered as the sportsmanship phase of his play. In this way we have created an interest in good fencing and through the rewarding of both the best team as well as the best individual fencers in the tournament through a set of medals known as the "Interscholastic Fencing Directors' Awards" the quality of foil play has been much improved.

That there is keen interest in the "Form Rating" received is evidenced by the many inquiries from both individuals and teams regarding their standings. So keen was this interest in the past few years that even the usually placid (in matters of this kind) press had to recognize and mention it in the press reports. Every fencer receives a rating (from 0-10) from the director who consults the judges every time a competitor fences. The team rating is the sum of the individual ratings divided by the number of bouts fenced. The team having the highest average (irrespective of the division they fenced in) for the season, wins the award. The ten highest ranking fencers with respect to form, also without regard to division, compete for the gold, silver and bronze awards shortly prior to the preliminary round of the regular individual championships.

The ten fencers fence a round robin—each bout two and one-half ($2\frac{1}{2}$) minutes in duration. Four judges mark "Form" and two direct the activity. Four 3″ x 5″ cards of different colors (red, blue, yellow and white) are prepared. Each sheet is divided in half bearing the name of each fencer fencing the bout, with the number of the bout placed in the upper right hand corner of the sheet. The fencers fence one and one-quarter minutes ($1\frac{1}{4}$) in one direction and then change sides. Each fencer receives a rating from zero to ten by the judges during this time. At the end of the two and one-half minutes a recorder collects the four sheets and records the marks on a summation sheet. The ten fencers fence forty-five (45) bouts, nine (9) each. Another clerk keeps time and records the touches made by the fencers during the bout. Not only is the "Form" considered in this competition but the effectiveness of his fencing is taken into account as well.

PUBLIC SCHOOLS ATHLETIC LEAGUE OF NEW YORK CITY

FENCING TOURNAMENT — TEAM SCORE SHEET

Strip No..... Division..... Date.....

INSTRUCTIONS

SCORE TOUCHES FOR. Rating for Form should be given each time fencer is fencing. Scale is from one to ten points.

REMINDERS TO DIRECTOR:

1. Are the foil tips properly taped? 2. Has the mask a bib?
3. Is the jacket in good condition and is the collar closed?
4. Is the groin properly protected? In general note any peculiarities in dress and equipment.

H. S. H. S.

COMPETITORS

No.	Regular	Substitute	No.	Regular	Substitute
1			7		
2			8		
3			9		
4			10		
5			11		
6			12		

SCORE

BT	Name	Form	Tchs	Tchs	Form	Name
3-10						
2-7						
4-9						
6-11						
1-8						
5-12						
3-9						
2-8						
4-10						
6-12						
5-11						
1-7						
	Total					
Bouts Won						Bouts Won
	Avg.					

Director

FORM I

DIVISION II

Name	Change Line-up	2/15	3/1	3/8	3/15	3/22	3/29	4/5	—	—	Pts	Bts Won	Touches Against	Place	Form Points	Place
BAYSIDE	3/1	2-19-9 6 1 6.39 43	3-24-27 6 2 7-83 51	2-4-16 7 2 7.30 39	5-12-14 8 2 6.96 42	6-8-21 5 0 6.71 45	BYE	1-13-30 6 1 7.08 42	—	—	8	38	262	3	42.27	1

Directors		School			
No.	Name	Stuy	7	15	23
1	John Smith	Morris	8	16	24
2	Fred. Poe	Madison	9	17	25
3	Jos. Hall		10	18	26
4			11	19	27
5			12	20	28
6			13	21	29
			14	22	30

FORM II

FORM III

P.S.A.L. FENCING TOURNAMENT - 1941

INDIVIDUAL PERFORMANCE RECORDS

SCHOOL - BAYSIDE

NAME	RANKING	2/15 B	2/15 F	3/1 B	3/1 F	3/8 B	3/8 F	3/15 B	3/15 F	3/22 B	3/22 F	4/5 B	4/5 F	4/12 B	4/12 F	TOTAL W/L	% BOUTS WON	POINTS BY FORMULA	FORM AVERAGE	PLACE
JONES, WM.	111111	2 0	9.3	2 0	9.0	2 0	8.5	1 1	7.7	2 0	9.3	—		2 0	8.8	11 1	91.7	192.16	8.76	3
SMITH, HENRY	223333	0 2	5.0	1 1	9.3	0 2	5.5	2 0	7.5	1 1	8.0	—		0 2	7.3	4 8	33.8	#57.8	7.10	—
DOE, ALBERT	332222	1 1	8.0	2 0	7.5	2 0	8.3	1 1	7.7	2 0	7.0	—		2 0	8.3	10 2	83.3	174.4	7.80	12

HENRY SMITH FENCED NO. 3 IN MOST BOUTS. THEREFORE THE FORMULA WAS 2(33.8)(0.75) + 7.10 = 57.8

P.S.A.L. FORM FENCING CHAMPIONSHIP - 1941

INDIVIDUAL COMPETITION

• SUMMARY SHEET •

NO.	NAME AND SCHOOL	JUDGES	BOUT NO. 1	2	3	4	5	6	7	8	9	TOTAL	FORM AVERAGE TOTAL	BOUTS WON	AVERAGE TCHS F/A	PLACE
1.	JONES, WM. BAYSIDE	WHITE	8.0	8.5	8.5	8.5	9.0	9.5	9.0	8.5	9.0	78.5	$\frac{305.50}{9}$ = 33.944	6.0	$\frac{32-24}{9}$ = 0.89	2
		BLUE	7.0	7.0	9.5	9.5	9.0	8.0	9.0	9.0	8.5	76.5				
		RED	8.0	8.0	8.0	8.5	8.5	8.0	8.5	8.5	9.0	75.0				
		YELLOW	7.5	8.0	8.0	8.5	8.0	8.5	9.0	9.0	9.0	75.5				
2.	WHITE, JOHN TEXTILE	WHITE	7.0	7.5	6.0	7.5	6.0	5.0	5.5	5.0	6.0	55.0				
		BLUE	5.5	6.0	6.0	5.0	6.5									
		RED	6.0	7.0	6.5	6.0										
		YELLOW	6.0	6.5	5.0											

FORMULA:

FORM AVERAGE TOTAL + BOUTS WON + AVERAGE (TCHS FOR − TCHS AGST) = PTS.

CALCULATION:

$33.94 + 6.0 + \left\{\frac{32-24}{9}\right\} =$

$33.94 + 6.0 + 0.89 = 40.83$

The formula used in determining the winner is: Average Form rating Total plus number of bouts won plus Average (touches for minus touches against) equals—points. Off hand all this may seem like a great deal of ado, but the experience of the past eight years indicates that it is worth the trouble. The results bring out to our adolescent participants that good fencing pays and that ultimately "Form" fencing is really championship fencing. Some don't quite get the point, but experience has convinced us that in fencing, which is a bit different from other sports, the effort to stress finesse and do all that is possible to induce its use in our energetic youth is well repaid when we cut down the slash-bang tactics so often seen which not only appear dangerous but actually are.

In a large school system such as that of New York City where there are thirty-six or more high schools, seventeen of which had teams entered in the tournament, the group is divided into two divisions as previously mentioned, and a round robin tournament in each division takes place. Eight strips are in action simultaneously on successive Saturday mornings. The winner of Division I then meets the winner of Division II for the city championship and the runners-up meet to settle the question of third place. A record as shown in Form II is kept. This gives a clear picture of just how the teams stand and what the distribution of the officials directing the matches was. The purpose of the latter is to try to give each team as great a variety of directors and judges as possible so that no unconscious leaning toward one team or another is produced, and further that the final "Form" rating represents a cross-section of a goodly number of directors.

Naturally the officials are alumni, and for this reason consideration is also given to avoid, as much as possible, having an official serve in the division in which his alma mater is fencing. Consideration of this matter avoids a great deal of trouble. Prior to the time that volunteer help was in abundance the experienced fencer was used as Director and the first two ranking boys of each team were used as judges on adjacent strips. In other words, Division I fenced on the odd-numbered strips while Division II fenced on the even-numbered strips. Undoubtedly the use of competitors as judges has an educational value in that it will develop "officiating appreciation" and result in better sportsmanship because of the realization of the difficulties involved in making decisions. However, the spirit of the Alumni fencers is so keen, their loyalty to the sport so great and their eagerness to assist so intense that it would be unwise to discourage them. The values gained through organizing them into an association outweigh the educational values of having competitors act as judges.

Beside this team record, an individual record (Form III) is kept showing in detail each fencer's standing. Of course this adds a good deal of work to the conduct of the tournament, but since it is not merely the conduct of the tournament an educator should be interested in but rather the educational lessons he can spread through it, the additional work is well worth the effort involved. The Individual Championship is contested among the thirty-six (36) highest ranking fencers irrespective of which division they fenced in and irrespective of what institution they represent. Each must, however, have fenced in at least seventy (70) per cent of the total possible number of bouts. These thirty-six are chosen by use of the following formula:

$$\text{Two times per cent bouts won times } \begin{pmatrix} 1.00 \\ .75 \\ .50 \end{pmatrix} \text{ plus Avg. Form Rating} = \text{Points.}$$

The multiplication by 1.00, .75 or .50 is based on whether the fencer is in group A (1 and 2), group B (3 and 4) or group C (5 and 6). In this way it is hoped that only the deserving ones who have proven their quality during the dual meet season will qualify. Of course it would be easier to say two boys from each school, but then it may be possible that the fifth or sixth boy of a good team may be better than the first boy of some poor team. In the interest of fair play this additional work is done.

The preliminary round of the Individual Championships consists of the thirty-six highest ranking fencers in the tournament. These are split into six groups of six fencers per strip, using their rank for distribution purposes and avoiding, as much as possible, having fencers of the same institution on the same strip. The first three from each strip qualify for the semi-final and are again arranged into groups of six on three strips based on their standings in bouts won—touches for and against. Two from each strip qualify for the final round. This finds us with the six best fencers brought together in a round robin for the Individual Championship. The awards for victory in this round are a gold, silver and bronze medal, emblematic of the P. S. A. L. Individual Championship of New York City.

This is a picture of a tournament which starts early in February and runs through the early part of May, covering both a team as well as an individual championship competition. The aim is to foster good performance, high standards of sportsmanship, friendship and understanding among competitors, and a good insight into the considerations involved in the conduct of a successful tournament. The basis of success is the realization on the part of the contestants that everyone connected with the tournament is friendly and has the interest of the sport and of its participants deeply at heart.

TEACHING GUIDE FOR CO-EDUCATIONAL ACTIVITIES IN PHYSICAL EDUCATION—(Continued)*

SOCIAL ACTIVITY

Historical Background

Social activities have been practiced by all races and all nations at all times. Their form and meaning have varied with the age and the place, but the pleasure derived has been common to all.

The dances of the old Greek peasants were performed in honor of Bacchus to thank him for a successful vintage. The Egyptians modeled their movements on the celestial motions and their dances were done in devotion to the sun. In Sparta the dances were warlike. The Persians indulged in musical actions alternately with horseback riding because it strengthened the body. In Old England the May Day revels were an expression of happiness at the return of spring.

France was noted for its dancing. It is said that during the tournaments of knights who gave their exhibitions of prowess during the day it was equally necessary that they show their skill in the ballroom at night before winning their laurels.

In more recent times certain dances have become characteristic of a country and its people. England, a nation of seamen, has its Hornpipe as a national dance. The Irish have the Jig and the Scotch have the Reel. These latter two dances are seen at their very best at an old-fashioned country wake. Scotland, in spite of its devotion to religious observances, has always been a land of dancing. In Spain the Fandango is the basis for nearly all Spanish dances. Throughout Italy the Tarantella is the favorite dance.

Germany introduced the waltz and then gave it to England. The original version is very similar to the dance enjoyed in America during the eighties and nineties except that it was originally a fast, energetic dance.

The Castles, prior to 1917, established the popularity of dancing. To them belongs the credit for this internationally wide custom. Today in America the most favored dance is the Fox-trot with its many variations. Perhaps the most unusual thing about it is its name; it has nothing to do with foxes or hunting, and it is not really a trot.

The waltz will always be popular with those who acquire some skill in its performance. The fascinating rhythms of the Tango and the Rhumba offer a challenge to ambitious amateurs.

While it is inevitable that people will dance it is not necessary to accept it entirely as it is. Youth can be led to higher standards of social conduct through the romance of rhythm, gayety, the excitement and adventure of making new friends in social groups.

Objectives

Social activity should be thought of as a desirable activity; one that satisfies some of the known drives of secondary school girls and boys such as:

To choose friends
To search for self-expression through personal accomplishment
To develop a feeling of time and rhythm
To provide natural, social situations for encouraging students to be at ease with mixed groups
To permit boys and girls to enjoy each other's company in wholesome activity
To meet the demands for parties at school
To stimulate interest in doing correctly popular forms of social dancing
To raise the experience horizon

Outcomes

The activities presented in this program offer the student experiences which in later life will supply him with a wholesome outlet for his energies during many hours of leisure. They also contribute much toward enabling the student to adjust himself to a situation involving association with members of the opposite sex.

Social activity contributes definitely to the development of skill, poise, and rhythm of action of the individual and to the development of desirable standards of conduct. If the pupil is to know what is proper and desirable he must be offered experiences in which these standards are in evidence. Proper form, courteous behavior patterns, personal cleanliness, and mutual respect are standards that are very much in evidence in a well conducted program.

In addition, there should be pupil mastery of
Self-direction and self-control
Sensory coordination
Leadership
Cooperation
Physical expression

* This is the last of three articles carried in The Physical Educator. This material was obtained from the Division of Instruction and Curriculum through the cooperation of Mr. Martin H. Trieb. This material was published in 1941 and is being used as a teaching guide in the Junior and Senior High Schools of Los Angeles. The first two sections of this material appeared in the October and December issues of The Physical Educator.

Mental alertness
Skill
Social sensitivity
Social poise
Good posture and body control
Social activity as a vital part of each student's recreation

The Approach To Teaching

Social activity is rhythmic movement done by partners in an organized pattern. This pattern is limited only by the restrictions of the accepted dance position, and should be based upon the measure and phrase structure of the music. Two things must be firmly established in the minds of students: First, in order to dance with a partner, good posture in motion must be established. Second, in moving about the floor, the dancers should follow the measure and phrase structure of the music.

The few fundamental "steps" that form the basis for social activity are usable with any rhythm. A student should not feel that he must learn separate steps for a fox-trot, a waltz, or a tango. First, he should learn rhythm and phrasing, not steps. When he has learned phrasing he has learned the key to all step combinations and can work out his own when he has seen examples taught by the instructor. He will find that "keeping time" to the music is only one part of dancing. Another part is varying the step combination as the music pattern varies.

Before learning any so-called "steps" the student should have good control of his body. He must learn to stand, walk, and turn with rhythmic ease. He should be taught to recognize and be able to move with each different rhythm. Then he is ready to discover that a walking step will fit anything, that he wants to accent different beats with differently accented rhythms. He will find, for instance, that one of the units of body movements for marking off measures in either 2/4, 4/4 or 3/4 time is the same (i.e. a combination of one walking step and a side step) except that the accent or value changes with each rhythm.

Music directs the boy and the boy directs the girl. When these are in harmony they are dancing.

Types of Classes

Junior or senior high schools may use any of the following class plans:

Block Plan

The class meets coeducationally daily for a period from three to ten weeks, with two days of dancing and two days of suitable sports. The fifth day may well be devoted to health instruction (boys and girls separately).

Elective Block Plan

Same as above, except that the students in combined classes may elect whichever activity they wish for the given number of weeks.

Special Class Plan

One day each week selected physical education classes meet together for one period. Each group (size determined by space) participates in the activity which has been determined, such as dancing or any sport suitable for both sexes. Teaching is done by both men and women teachers.

Parties As a Class Project

Parties, either during class time or on a larger scale after school, should be a part of the dance program.

Parties should be planned and executed by coeducational student committees under the supervision of teachers.

In order to teach completeness in planning, some standing form should be used from which the student may work.

Organization and Administration Within the Class

Musician and Music

A pianist for the instructional period should be available. Records may be used when a pianist is not available. The ability of the pianist as well as the type of music used are important factors in teaching and student performance; therefore, great care should be taken in the selection of both.

Officers and Duties

Class officers should consult with teachers and work in close coordination with them. The wishes of the students should be conveyed to the teachers by the officers so that the class activities remain close to the interests of the class.

Teaching Formations

Begin class with a grand march and finish with class on one side of the gymnasium for lesson instruction.

1. Line Formation
   a. Front line formation with girls and boys alternately
   b. As above, with elbows linked
   c. As above, with girls moving backward, starting with right foot
   d. As above, with partners elbows linked
   e. As above, with partners facing, hands on each others' shoulders
   f. As above, with partners in dance position

2. Diagonals and Circles
   Practice the lesson across the floor several times in dance position.
   A large circle or a double circle moving counter clock-wise may be formed and the steps practiced in this formation.
   Partners should be changed frequently. The period may be concluded with practice without instruction.

Teaching Suggestions

Starting signal or cue should be arranged between teacher and pianist.

Have class clap the accents for different rhythms.

Have pianist accent first beat of each measure.

Suggest that pupils listen particularly to the piano base in order to recognize the tempo.

Individual help may be given at the end of the instructional period.

Start the class with simple steps in order to maintain interest and enthusiasm.

Courtesy, enthusiasm, and pleasure in accepting and dancing with *any* partner are expected regardless of personal preference or partner's ability.

Students must first recognize the rhythm and tempo of the music through the auditory sense before they express it kinaesthetically in dance steps.

Basic steps should be taught in progression according to difficulty. When the fundamental steps have been learned a new step or a new combination of steps should be given at the beginning of each instructional period. After a student has learned the basic steps, he should be given an opportunity to fit the steps to whatever music is played. Allow the students, while practicing, to improvise and combine steps, making their own patterns. In this way opportunity is given for creativeness in step sequences and combinations.

Emphasize the contrasting techniques of leading and following.

Stress good posture as the basis for the correct dancing position.

Instruction and practice in dance etiquette should accompany dance instruction.

Dances should be short. A variety of "mixers" should be used to assure frequent changes of partners.

Effort should be made to see that each girl and boy experiences some success each day.

Teachers may obtain professional help from their supervisors.

Common Faults of Students and How to Correct them

1. Posture
   a. Analyze good posture to class
   b. Emphasize posture before each new movement is taught
   c. Make individual correction
2. Rhythm
   a. Have group clap the rhythm
   b. Use a percussion instrument for accent
   c. Individual instruction

Analysis of Dancing Style

1. Do not combat current types of dancing. Teach good style for doing any type, and teach steps and combinations of contemporary modes that are good form.
2. Insist upon so-called "smooth" dancing. Note the evolution of types from "ragging" up through "jitterbugging"—all are stemmed from "smooth" dancing.
3. The steps of "smooth" dancing are basically the same in all dancing. It is only the style of doing them that changes from year to year.

Material To Be Taught

Basic Steps

1. Walking step—forward and backward
2. Side step—left and right; step to left with left foot and close with the right foot. When a side step follows or precedes any step which is a forward or backward movement, the ankle of the moving foot passes the support-foot before stepping to the side. Avoid stepping diagonally into a side step.
3. Waltz steps
   a. Forward—backward
   b. Box step—left and right
   c. Waltz turns—left and right
4. Tango steps

Simple Combinations of Walking and Side Steps (4/4 time)

1. Two walking steps forward, starting left foot—one side step to left—one step forward with left foot (4 counts)
2. Two walking steps backward starting left foot—one side step to left—one step backward with left foot.
3. Two walking steps forward or backward and two side steps to the left.
4. Three walking steps forward or backward and one side step.
5. Two walking steps forward or backward and two side steps.
6. One walking step forward or backward and three side steps.
7. One walking step forward and one side step. (This is a waltz step to 4/4 time.)

Waltz Steps (3/4 time)

The waltz step is one step forward combined with one side step, even rhythm.

The Box Step

The box step is the foundation step for all waltz turns. It is made up of two waltz steps,

one waltz step forward and one waltz step backward. Practice starting with first, the left foot, and then the right foot.

Waltz Turns

Waltz turns are made up of two complete box steps. A complete turn is made in four quarter turns.

1. Description of a waltz turn left
   Step forward on the left foot making a quarter turn left; step right sideward and close with left; step right backward making a quarter turn left; step left sideward and close with right; step forward left making a quarter turn left; step right sideward and close with left; step backward right making a quarter turn left; step left sideward and close with right.
   Note: On the forward step turn the toe out; on the backward step turn the toe in.
2. Combinations involving waltz turns
   a. Six quick walking steps forward, one box step, and one complete waltz with waltz steps
   b. Three quick walking steps forward, one waltz step forward, one box step and a waltz turn to left with four waltz steps
   c. Two waltz steps forward, three quick steps steps forward, waltz turn right with four waltz steps, step forward right and hold
   d. Box step and a waltz turn with two waltz steps
   e. Three quick steps forward, two waltz steps turning to right and hold

Tango (2/4 time)

Any step pattern may be used by adapting it to tango rhythm. However, the odd rhythmic beat of the Tango requires a distinct styling of performance. Certain combinations are more suitable than others to the tango rhythm.

A typical combination follows:

Step forward on the left foot (counts 1-2)
Step forward on the right foot (counts 3-4)
Step forward on the left foot (count 1)
Step right sideward (count 2)
Close with the left foot, keeping weight on right (counts 3-4)
Repeat starting with the left foot

Note: Always close and hold on the last two counts. This step may be finished with the weight on the "close" foot if alternating sides is desired.

Suggestions for Leading and Following

1. Leading by the boy
   a. The boy should maintain a correct posture, well erect with controlled suppleness in motion.
   b. He should keep the center of his balance in his hips.
   c. He should move his body in the direction toward which he wishes to step *before* he puts his foot down for a step.
   d. He should glide his foot along the floor slightly just before he is ready to step, in order to avoid stepping on the girl's foot. (Caution: He should not always slide his feet along the floor.)
   e. He should hold the girl squarely in front of him and far enough away so that there is freedom of movement.
   f. He should lead by making contact with the girl between his forearm near the wrist and her back just below the shoulder. In this position he is able to guide her effectively.
2. Following by the girl
   a. The girl should maintain a correct posture, leaning slightly forward toward the boy.
   b. Her left arm should be in contact with the boy's right upper arm and shoulder, and her right hand should touch the boy's left
   c. Her movements should depend entirely upon the boy's lead, and her step should be taken with the full reach of her leg.
   d. She should time the placing of her foot upon the floor an instant after the boy's step, gliding slightly just before she places her foot down in order to avoid stepping on the boy's foot. (Caution: The girl should not always slide her foot along the floor.)

Etiquette

Living with Others

Golden Rule—foundation of good manners.
Know social usage so you can meet people and situations.
consideration for others.

1. Never enter a private room without knocking.
2. Don't ask personal questions.
3. Be particularly courteous to older people.
4. You say "Excuse me," when you walk in front of another or before any other deliberate action for which you need ask permission. If you accidentally push against another person say, "I'm sorry," or "I beg your pardon."

Conversation

1. Avoid topics that may make some one in the group uncomfortable.
2. Don't tell things that will cause trouble between friends or hurt anyone.
3. Talk interestingly. Gruesome details of death, operations, and accidents should be avoided.
4. Dance conversation is usually light and joyous. Philosophies of life are not discussed on the dance floor.

Introductions

Making introductions is easy after one has learned a few simple rules

1. The older person or the more important person is named first. "Dr. Young, may I present Miss Shaw?"
2. The girl is named before the boy. "Miss Brown, may I present Mr. Camp?"
3. Other accepted forms:
   "Mrs. Briggs, do you know Miss Rhodes?"
   "Jane, you know Tom Grant, don't you?"
4. Never say "pleased to meet you," but look it.
5. The correct response to all introductions is "How do you do?"
6. When two boys meet they always shake hands. A girl extends her hand if she cares to. Make your handclasps firm and definite—neither limp nor crushing.
7. A boy always rises for an introduction, whether to another boy or to a girl. A girl rises for an older woman. She does not rise for a boy unless she is the hostess.

Simple Rules of Eating

1. How to eat soup (how not to say "Whoop," with your soup)
2. How to eat bread and butter—hot rolls, etc.
3. Finger foods
4. How to hold a knife and fork and use it correctly
5. Table conduct at a dinner party
6. What silver—when

Hints for Dating

1. How to ask for a date.
2. Plan for girl's entertainment
3. Be on time
4. Call at the house for your girl. Do not sit in the car and sound the horn for her to come out. Open and close the car door for her
5. The girl waits for the boy to open doors and pick up things she drops. Enjoy being looked after. Be considerate of the boy's pocketbook.
6. Don't break a date unless it is a physical impossibility to keep it.
7. If you have a "blind" date you are responsible to see that the girl has a good time.

When Invited Out

1. Dress for the occasion.
2. What to do at a tea, reception, art gallery, concert, lecture, and theatre.

When in Public

1. Do not be conspicuous by loud laughter, chewing gum, public demonstration of affection, etc.
2. Dining out—restaurant—types of service (a la carte, table d'hote, tips, and other social usages encountered when dining out).

Social Hints

1. It is the girl's place to speak first when she meets a boy she knows.
2. Say "thank you" for any courtesy shown, no matter how small it may be.
3. Well-bred people do not chew gum nor apply make-up in public.
4. A girl always precedes a boy through a door way.
5. Boys always walk on the curb side of the sidewalk when walking with one or more girls.

Being a Guest

1. When staying over night or longer, do your part to make things run smoothly.
2. Be on time to meals.
3. If hostess asks you your preference in regard to food or entertainment, speak up. You do not help her when you say "It makes no difference to me."
4. After arriving home, it is necessary to write the hostess a note telling her how much you enjoyed your visit. This must not be neglected.

As Others See You

1. Value of first impressions
   a. Posture
   b. Clothes
   c. Good grooming
   d. Cleanliness
   e. Dressing for the occasion
2. Rules of etiquette are based on consideration of others and their value lies in that foundation.
3. Knowing all the rules will be of little value if your courtesy is not founded on a genuine concern for others.
4. Don't push through life. Be careless of the time you give others.
5. Be yourself. Within your personality lies your influence. Direct it toward the best.

Dance Etiquette

The basis for equable, happy living among human beings is: "Do unto another as you would have him do unto you *if you were the other person.*"*

The rules of etiquette merely indicate how the theory can be put into practice in specific instances.

A dance occasion is a specific instance of social living, and in order that both the girls and the boys may enjoy the affair equally, they should be cognizant of their own responsibilities toward each other and everyone concerned with the party. Treating everyone who is concerned with a dance as one would wish to be treated by the other in the

* Revision of the Golden Rule (author's name withheld; quote permission herein only granted.)

other's place will assure perfect expression of dance etiquette.

Although the boy, for obvious reasons, is held responsible for the welfare—both physical and social—of the girl during the event, the girl is obliged to share the responsibility by thoughtful graciousness toward her escort.

It is important that girls realize the strain of shyness which young boys undergo in their early years of "dating," and everything that the girl says or does should be an attempt to make it easy for the boy to fulfill his responsibilities toward her.

It is important that boys realize that a girl should not be taken care of from a proprietary point of view, but that her wishes should be considered with the same friendly fairness that the boy would show another boy.

Basically every boy desires to take care of a girl, and every girl desires to be cared for; the boy needs to learn how to do so unselfishly and properly, and the girl needs to learn how to be worth the trouble.

The following outline indicates some specific points of dance etiquette. All dances should be under the supervision of at least one woman and one man as chaperones or patrons.

A suggestion for relieving the strain of arriving at the party in single couples is for one girl in a group of friends to invite one or more couples to meet at her house before going to the dance.

The Date

The girl, after receiving approval of her mother, accepts or declines immediately; she does not delay for a better date. The boy makes his request as soon as possible. He arranges to meet the girl's parents before his request if possible—if not, before the date.

Flowers

The girl wears the boy's flowers whether she likes them or not. She thanks him for his thoughtfulness. She wears them while dancing, where they will receive least bruising.

If formal, the boy sends flowers. They should arrive a few hours before the dance. He asks the color of the girl's dress and selects harmonizing shades. He asks the girl if she wants a corsage or flowers for her hair. He chooses size to fit the girl. He keeps within his allowance.

Clothes (According to Southern California custom)

For formal parties the *girl* will wear a formal dress. She wears a wrap to and from the dance. Informal—party dress. Sport—sport clothes. For formal parties the *boy* will wear a "tux" or "tails." Informal—dark suit, white shirt, dark tie, dark shoes, and socks. Sport—sport clothes with coat. (Rubber soles are not good for dancing.)

Transportation

The girl should be ready on time. If another couple is furnishing transportation, cooperate with escort in suiting departure time to others. If the boy has his own car or his family's car, or he arranges in advance to share the car of another couple, the arrival and departure time is determined by the owner.

Responsibility to Parents

The girl should allow the boy to visit a moment with a member of her family before departure for the dance. She expects one of her parents to be in the living room when she returns and respects the courtesy of the presence.

The boy asks the girl's mother when she wishes her daughter to be home. He gets her there on time, sees her to the door but does not go in, even if invited. He does not linger.

Arrival at Dance

Both the boy and the girl go to their respective dressing rooms and "touch up"; leave wraps. In case checking girls wrap requires a fee, the boy should be responsible. The girl should not "make-up" outside the dressing room. The boy and girl meet wherever the other couples are meeting.

The boy and girl go together to greet the hostesses or patrons. The girl precedes the boy if there is a receiving line. Both acknowledge introductions and greetings but do not stand and talk in the receiving line. Chatting should be done later with any adults in whose home one has been entertained.

Dances

The girl reserves the first and last dance for her escort. The girl accepts or rejects immediately all offers to dance. If she rejects an offer she sits out but does not dance during the same dance with another boy.

The boy must see that the girl has a partner for each dance. He introduces her to his friends. If programs are used, he fills it out for her if she desires, and chooses boys whom he thinks she will enjoy. Whether programs are used or not, exchange dances with other couples.

When a dance is finished the girl expresses her thanks to her partner. If she does not have the next dance and suspects that the boy has, she asks him to take her to patrons or friends so that he can leave her gracefully. If "stuck" she asks to be taken to friends and sits out if necessary.

The boy asks for a dance saying, "May I have this dance?" or any substitute of the manner

of these words. When the dance is finished he thanks the girl and sees her off the floor wherever she wishes to go. The girl should be on his right when walking or sitting. He crosses behind her. If the music begins and he does not have the next dance he asks the same girl for it *always*. If "stuck," he takes her to the patrons or to a group of friends before the next music starts, then excuses himself. A boy should *never* leave a girl alone.

Refreshments

If punch is served, both boy and girl go to the table and the boy serves the girl. If buffet, the boy sees that the girl is served.

Leaving Dance Floor

The dance floor should never be left during a dance except to go to the dressing rooms.

The girl should remain in sight and circulation. The boy should not monopolize the girl in secluded places.

Farewells

Find the host and hostess and thank them for the pleasure of the party. This should be brief but cordial and sincere. Do not linger when you have started to leave.

General Manners

Do not chew gum. Keep the voice low for the benefit only of the persons to whom you are talking. Laugh when anything is funny, but not when you don't know what else to do. Talk when you have something to say, but avoid nervous jabbering. Walk slowly and with good posture. Dance well and in good carriage, but avoid extreme styles of dancing that would make you unnecessarily conspicuous. Avoid "showing off." Listen attentively when someone is talking and encourage conversation about things and events. Avoid talking about people. Do not interrupt or contradict.

If a boy asks a girl about her interests, she should not keep him waiting too long for a chance to tell her about his.

Boys should try to find what the girl is interested in and encourage her to tell him about it. He should not go into detailed description of his hobby until she has asked for it.

Try to forget, once in a while at least, that you are of opposite sexes and be just people.

SUGGESTED BIBLIORAPHY ON ETIQUETTE

*1. Allen & Briggs, *Behave Yourself.* Lippincott, 1937.
2. Black, Kathleen, *Manners for Moderns.* Allyn & Bacon, 1938.
3. Brophy, Loire, *If Women Must Work.* Appleton, 1936.
4. Byers, Margaretta, *Designing Women.* Simon, 1938.
5. Byron, G., *Give Yourself a Chance.* McClelland, 1937.
*6. Carroll, Loren, *Conversation Please.* Bobbs, 1939.
*7. Clark, Mary E., *Etiquette Jr.* Doubleday-Doran, 1937.
8. Edwards, Jill, *Personality Pointers.* Bobbs, 1935.
9. Eichler, Lillian, *New Etiquette.* Doubleday, 1934.
10. Gardner, Horace, *Courtesy Book.* Lippincott, 1937.
11. Gillum, Lulu, *Social Usage for High Schools.* Gillum Bk. Co., 1937.
12. Hadida, S., *Manners for Millions.* Doubleday, 1932.
13. Irwin, Inez H., *Good Manners for Girls.* Appleton-Century, 1936.
14. Lane, Janet, *Your Carriage, Madam.* J. Wiley & Son, 1934.
15. Horan, Kenneth (Mrs.), & Hahner, M. B., *100 Points in Etiquette and 101 Don'ts.* Grosset, 1929.
16. Peyser, E. R., *The Book of Culture.* Esser-Frederick, 1934.
17. Phillips, M., *Skin Deep.* Garden City, 1934.
*18. Pierce, Beatrice, *It's More Fun When You Know the Rules.* Farrar, 1935.
19. Pierce, Beatrice, *Young Hostess.* Farrar, 1938.
*20. Post, Emily, *Etiquette.* Funk & Wagnalls, 1937.
21. Stote, Dorothy, *Making the Most of Your Looks.* Brentano's, 1926.
*22. Stevens, Wm. O., *The Correct Thing.* Dodd, 1934.
*23. Stevens, Wm. O., *The Right Thing.* Dodd, 1935.
*24. Van De Water, *Present Day Etiquette.* Burt, 1926.
25. Vogue, *Vogue Book of Etiquette.* Doubleday, 1935.
26. Wheeler, Elmer, *Tested Sentences that Sell.* Prentice Hall, 1937.
27. Wilson, Margery, *Charm.* Stokes, 1937.
28. Wilson, Margery, *New Etiquette.* Stokes, 1937.

SUGGESTED BOOKS FOR TEACHERS

Ballwebber, Edith, *Group Instruction in Social Dancing —Social Occasions.* A. S. Barnes and Co., N. Y., $2.50.

Brando, R., *Ballroom Dancing Made Easy.* Pearson, 1936.

Candler, E., *Modern Ballroom Dance Instructor.* Geographia Ltd., 55 Fleet St., London, 1934.

Casani, S., Home Teacher, *Ballroom Dancing Made Easy.* Heath, Cranton.

Conlon, H. M., *Technique of Social Dancing.* 1933, $1.75.

Hostetler, L. A., *Art of Social Dancing.* A. S. Barnes, 1934, $2.00.

Lee, B., *Dancing, All the Latest Steps.* Clode and McLeod, 1935, $1.00 and $2.24.

Marsh, A. L. and L., *New Dance Steps for Up to Date Teachers.* J. Fischer, 1935, $1.00.

Marsh, A. L. and L., *Textbook of Social Dancing.* J. Fischer, 1932, $2.50.

Murray, Arthur, *How to Become a Good Dancer.* Simon and Schuster, 1938, $1.00.

O'Donnell, Mary P. and Dietrich, Sally T., *Notes For Modern Dance.* (Spiral) $2.00, (Cloth) $2.50.

Scott, E., *Better Ballroom Dancing.* Grayson, 1934.

Silvester, V., and Richardson, P. J. S., *Art of the Ballroom.* Jenkins, 1936.

Silvester, V., *Theory and Technique of Ballroom Dancing.* Jenkins, 1933.

* Indicates sources which are especially valuable.

ACHIEVEMENT SCALES IN STRENGTH TESTS FOR SECONDARY SCHOOL BOYS AND COLLEGE MEN*

KARL WEBBER BOOKWALTER, Ed. D.,
Assistant Professor, Indiana University

and

CAROLYN WEEMS BOOKWALTER, Ed. D.

PART I

ACHIEVEMENT SCALES IN STRENGTH TESTS FOR SECONDARY SCHOOL BOYS

The present emphasis upon strength for "emergencies" should not be forgotten in times of peace. Administrators who survey physical education programs are at a loss to find adequate norms by which to compare the organic achievement of their pupils in their programs. Teachers of physical education in public schools and colleges have lacked standards by which to motivate development in a tangible outcome, *strength*. As a partial measure for a final mark in physical education, teachers have needed a just standard in these vital, well-known strength measures. A further use of these standards might well be for the guidance of prospective teachers of physical education in teacher training institutions.

Adequacy of Sampling

Accordingly, data have been collected for several years and from many sources including: 1. Bloomington Public Schools, 2. University of Illinois, 3. Indiana University, 4. Kemper Military School, 5. Notre Dame University, and 6. Williams College, in the following five tests:

1. Force Index (MacCurdy)
2. Larson Springfield Strength Test
3. Physical Capacity Index (MacCurdy)
4. Physical Fitness Index (Rogers) (Without belt technique)
5. Strength Index (Rogers) (Without belt technique)

In the secondary level, scales have been set up in McCloy's Classification Index I (20 Age + 6 Ht. + Wt.) and in California Interscholastic Federation groupings. The sampling in this level is fairly adequate, there being no less than 96 cases in any group. For one group in a certain test there are as many as 428 cases. As many as 2035 pupils were given any one test. Specific sampling data in all tests are found in Tables I and II, below:

TABLE I. SECONDARY SCHOOL DATA IN CALIFORNIA INTERSCHOLASTIC FEDERATION CLASSIFICATION GROUPS

Tests	Groups A	B	C	D	E	F	Totals
Force Index	174	192	200	251	326	318	1461
Larson Springfield	227	298	274	318	385	338	1840
Physical Capacity Index	162	188	200	251	325	318	1444
Physical Fitness Index	254	255	334	350	425	396	2014
Strength Index	259	255	347	350	428	396	2035

TABLE II. SECONDARY SCHOOL DATA IN McCLOY'S CLASSIFICATION INDEX GROUPS

Tests	Groups Up to 674	675-709	710-744	745-779	780-814	815-849	850-884	885-Up	Totals
Force Index	109	188	253	245	238	174	109	97	1413
Larson Springfield	111	207	286	301	303	269	143	126	1746
Physical Capacity Index	109	188	251	242	237	174	109	96	1406
Physical Fitness Index	141	234	321	342	324	266	231	150	2009
Strength Index	142	235	323	344	325	268	232	150	2017

* Achievement Scales in Strength Tests for College Men, Part II, will appear in the April issue.

Standards for Performance

When local data approximately agree with the general norms, the two bases given below may be employed to mark or indicate standards for the several tests herein described, on the basis of the scale score earned.

TWO BASES FOR ASSIGNING MARKS FOR POINTS EARNED IN MODIFIED T-SCORE (6σ) ACHIEVEMENT SCALES*

Point Ranges	*% of Cases*	*Mark*	*Point Ranges*	*% of Cases*
81-100	3.5	A or Superior	76-100	7
61-80	24	B or Good	59-75	24
41-60	45	C or Average	42-58	38
21-40	24	D or Poor	25-41	24
0-20	3.5	F or Inferior	0-24	7

* That basis should be employed which allots marks in the proportions most closely approximating those recommended by one's department.

Specific References

To many workers in the field the five strength tests and the classifying measures employed in this study are quite familiar. Some who wish to utilize the strength scales may not be so well acquainted with these particular strength tests and classification measures. For the convenience of the latter group of workers the following sources are given with brief annotation.

Cozens, F. W.; Trieb, Martin A.; Neilson, N. P. *Physical Education Achievement Scales for Boys in Secondary Schools.* A. S. Barnes and Co., New York. 1936. Pp. 10-13.

This classification plan (California Interscholastic Federation Classification Index) is an exponent system of combining age, height, and weight in the best manner to agree with successful performance in physical education activities. This plan and other similar plans have been shown to be effective in providing for individual differences in a reasonable degree. The present study clearly indicates that significantly different strength performances can be expected of different age, height, weight groups. (For those secondary schools already employing the achievement scales provided in the above book, it is recommended that this classification be employed for the strength tests of the present study.)

Larson, Leonard A. "A Factor and Validity Analysis of Strength Variables and Tests With a Test Combination of Chinning, Dipping, and Vertical Jump," Research Quarterly, 4:82, 1940.

The Larson Springfield Test is an inexpensive measure obtained from the weighted scores of chinning, dipping, and vertical jump. It is easily administered and computed. Proper weightings are given in the article quoted above. (The other four measures employed in the presures.)

MacCurdy, Howard Leigh. *A Test For Measuring the Physical Capacity of Secondary School Boys.* 25 Parkview Ave., Bronxville, New York. 1933.

Force Index is a measure of pure strength obtained by summing the dynamometrical scores on 1. arm pull, 2. arm push, 3. back lift, 4. leg lift, 5. grip right, 6. grip left. The techniques for items 3 to 6 are the same as in Rogers' test below.

Physical Capacity Index is obtained by multiplying *Force Index* (above) by Velocity Index. The latter index is the difference in inches and quarter inches between the reach and the vertical jump. The P. C. I. is based upon the mechanical principle that force times velocity equals power and is accordingly assumed to measure power in the individual.

McCloy, C. H. *Measuring Athletic Power.* A. S. Barnes and Company, New York. 1932. Pp. 96, 97, 119.

Classification Index I was the first age-height-weight classification to be scientifically validated and formulated. It is usable from the elementary level through college. A child can compute his own index from the table (p. 119).

Rogers, Frederick Rand. *Physical Capacity Tests.* A. S. Barnes and Company, New York. 1931.

Strength Index employs 1. arm strength (chins plus dips) times (weight ÷ 10) plus (height — 60), 2. lung capacity, 3. grips with right and left hands, 4. back lift, and 5. leg lift. The score thus obtained is not a pure strength score but is a satisfactory classification measure never-the-less. The equipment required is somewhat expensive but in light of the adequacy of the test, is probably justifiable. Since pupils can improve in the test by training, it is fitting to employ the test results as an achievement measure as well as for classification purposes.

Physical Fitness Index is obtained by dividing the obtained Strength Index score by the normal Strength Index score for the person's age and weight. This score is a relative measure less suitable for classification purposes than are the other tests in this study. As a supplementary measure, it is an index to the general health or physical fitness of the individual.

Rogers' norms for Strength Index are satisfactory in the younger age levels but have proved to be too high for adult levels.

For both Rogers' and MacCurdy's test, a recent belt technique has been devised which gives promise of being more adequate than the original techniques employed. The norms in the present study are invalid for the "belt technique" but norms are available at the Physical Fitness Institute for Rogers' tests employing the more recent technique.

ACHIEVEMENT SCALES IN STRENGTH TESTS FOR SECONDARY SCHOOL BOYS

(See following tables)

FORCE INDEX

California Interscholastic Federation Index Groups

Score	Class F 69 and below	Class E 70-74	Class D 75-78	Class C 79-82	Class B 83-87	Class A 88 and over
100	1517	1652	1890	1912	2285	2621
99	1504	1639	1874	1898	2268	2602
98	1491	1626	1858	1885	2250	2583
97	1478	1613	1842	1872	2233	2564
96	1465	1600	1826	1859	2216	2545
95	1453	1587	1810	1846	2198	2526
94	1440	1574	1795	1833	2181	2508
93	1427	1561	1779	1820	2163	2489
92	1414	1548	1763	1807	2146	2470
91	1402	1535	1747	1794	2129	2451
90	1389	1523	1731	1781	2111	2432
89	1376	1510	1715	1768	2094	2413
88	1363	1497	1700	1755	2076	2394
87	1350	1484	1684	1741	2059	2376
86	1338	1471	1668	1728	2042	2357
85	1325	1458	1652	1715	2024	2338
84	1312	1445	1636	1702	2007	2319
83	1299	1432	1620	1689	1989	2300
82	1287	1419	1605	1676	1972	2281
81	1274	1406	1589	1663	1955	2262
80	1261	1394	1573	1650	1937	2242
79	1248	1381	1557	1637	1920	2225
78	1235	1368	1541	1624	1902	2206
77	1223	1355	1526	1611	1885	2187
76	1210	1342	1510	1598	1868	2168
75	1197	1329	1494	1585	1850	2149
74	1184	1316	1478	1571	1833	2130
73	1171	1303	1462	1558	1815	2111
72	1159	1290	1446	1545	1798	2093
71	1146	1277	1431	1532	1781	2074
70	1133	1265	1415	1519	1763	2055
69	1120	1252	1399	1506	1746	2036
68	1108	1239	1383	1493	1728	2017
67	1095	1226	1367	1480	1711	1998
66	1082	1213	1351	1467	1694	1979
65	1069	1200	1336	1454	1676	1961
64	1056	1187	1320	1441	1659	1942
63	1044	1174	1304	1428	1641	1923
62	1031	1161	1288	1414	1624	1904
61	1018	1148	1272	1401	1607	1885
60	1005	1136	1256	1388	1589	1866
59	993	1123	1241	1375	1572	1847
58	980	1110	1225	1362	1554	1829
57	967	1097	1209	1349	1537	1810
56	954	1084	1193	1336	1520	1791
55	941	1071	1177	1323	1502	1772
54	929	1058	1162	1310	1485	1753
53	916	1045	1146	1297	1467	1734
52	903	1032	1130	1284	1450	1715
51	890	1019	1114	1271	1433	1697
50	877	1006	1098	1258	1415	1678
49	865	994	1082	1244	1398	1659
48	852	981	1066	1231	1380	1640
47	839	968	1051	1218	1363	1621
46	826	955	1035	1205	1346	1602
45	814	942	1019	1192	1328	1583
44	801	929	1003	1179	1311	1565
43	788	916	987	1166	1293	1546
42	775	903	971	1153	1276	1527
41	763	890	956	1140	1259	1508
40	750	878	940	1127	1241	1489
39	737	865	924	1114	1224	1470
38	724	852	908	1101	1206	1451
37	711	839	892	1087	1189	1433
36	699	826	876	1074	1172	1414
35	686	813	861	1061	1154	1395
34	673	800	845	1048	1137	1376
33	660	787	829	1035	1119	1357
32	648	774	813	1022	1102	1338
31	635	761	797	1009	1085	1319
30	622	749	781	996	1067	1301
29	609	736	766	983	1050	1282
28	596	723	750	970	1032	1263
27	584	710	734	957	1015	1244
26	571	697	718	944	998	1225
25	558	684	702	931	980	1206
24	545	671	687	917	963	1187
23	532	658	671	904	945	1168
22	520	645	655	891	928	1150
21	507	632	639	878	911	1131
20	494	620	623	865	893	1112
19	481	607	607	852	876	1093
18	469	594	592	839	858	1074
17	456	581	576	826	841	1055
16	443	568	560	813	824	1036
15	430	555	544	800	806	1018
14	417	542	528	787	789	999
13	405	529	512	774	771	980
12	392	516	497	760	754	961
11	379	503	481	747	737	942
10	366	491	465	734	719	923
9	354	478	449	721	702	904
8	341	465	433	708	684	886
7	328	452	417	695	667	867
6	315	439	402	682	650	848
5	302	426	386	669	632	829
4	290	413	370	656	615	810
3	277	400	354	643	597	791
2	264	387	338	630	580	772
1	251	374	322	617	563	754

LARSON'S SPRINGFIELD STRENGTH TEST

California Interscholastic Federation Index Group

Score	Class F 69 and below	Class E 70-74	Class D 75-78	Class C 79-82	Class B 83-87	Class A 88 and over
100	255	318	366	397	442	507
99	253	315	362	394	438	502
98	250	311	358	390	434	498
97	247	307	354	386	430	493
96	245	304	351	382	426	488
95	242	300	347	378	421	483
94	239	297	344	375	417	478
93	236	293	340	371	413	474
92	234	290	336	367	409	469
91	231	286	333	363	405	464
90	228	283	329	360	401	459
89	225	279	325	356	396	454
88	223	276	322	352	392	449
87	220	272	318	348	388	445
86	217	269	314	344	384	440
85	215	265	311	341	380	435
84	212	262	307	337	376	430
83	209	259	303	333	371	425
82	206	255	299	329	367	421
81	204	252	296	325	363	416
80	201	248	292	322	359	411
79	198	245	288	318	355	406
78	195	241	285	314	350	401
77	193	238	281	310	346	396
76	190	234	277	306	342	392
75	187	231	274	303	338	387
74	184	227	270	299	334	382
73	182	224	266	295	330	377
72	179	220	263	291	326	372
71	176	217	259	287	321	368
70	174	213	255	284	317	363
69	171	210	252	280	313	358
68	168	206	248	276	309	353
67	165	203	244	272	305	348
66	163	199	241	269	300	343
65	160	196	237	265	296	339
64	157	192	233	261	292	334
63	154	189	230	257	288	329
62	152	185	226	253	284	324
61	149	182	222	250	280	319
60	146	178	219	246	275	315
59	144	175	215	242	271	310
58	141	172	211	238	267	305
57	138	168	208	234	263	300
56	136	165	204	231	259	295
55	133	161	200	227	255	290
54	130	158	197	223	250	286
53	127	154	193	219	246	281
52	124	151	189	215	242	276
51	122	147	186	212	238	271
50	119	144	182	208	234	266
49	116	140	178	204	230	261
48	113	137	175	200	225	257
47	111	133	171	197	221	252
46	108	130	167	193	217	247
45	105	126	164	189	213	242
44	103	123	160	185	209	237
43	100	119	156	181	205	233
42	97	116	153	178	200	228
41	94	112	149	174	196	223
40	92	109	145	170	192	218
39	89	105	142	166	188	213
38	86	102	138	162	184	208
37	83	98	134	159	180	204
36	81	95	131	155	175	199
35	78	91	127	151	171	194
34	75	88	123	147	167	189
33	73	85	120	143	163	184
32	70	81	116	140	159	180
31	67	78	112	136	154	175
30	64	74	109	132	150	170
29	62	71	105	128	146	165
28	59	67	101	125	142	160
27	56	64	98	121	138	155
26	53	60	94	117	134	151
25	51	57	90	113	129	146
24	48	53	87	109	125	141
23	45	50	83	106	121	136
22	43	46	79	102	117	131
21	40	43	76	98	113	127
20	37	39	72	94	109	122
19	34	36	68	90	104	117
18	32	32	65	87	100	112
17	29	29	61	83	96	107
16	26	25	57	79	92	102
15	23	22	54	75	88	98
14	21	18	50	71	84	93
13	18	15	46	68	79	88
12	15	11	42	64	75	83
11	12	8	39	60	71	78
10	10	4	35	56	67	74
9	7	1	32	53	63	69
8	4		28	49	59	64
7	2		24	45	54	59
6			21	41	50	54
5			17	37	46	49
4			13	34	42	45
3			10	30	38	40
2			6	26	34	35
1			2	22	29	30

PHYSICAL CAPACITY INDEX

California Interscholastic Federation Index Groups

Score	Class F 69 and below	Class E 70-74	Class D 75-78	Class C 79-82	Class B 83-87	Class A 88 and over
100	197	249	299	350	481	631
99	195	246	296	346	476	625
98	193	244	294	343	471	618
97	191	241	291	340	466	612
96	190	239	288	336	461	605
95	188	237	285	333	457	599
94	186	234	282	330	452	593
93	184	232	279	327	447	586
92	182	230	276	323	442	580
91	180	227	273	320	437	573
90	178	225	270	317	432	567
89	176	222	267	314	427	561
88	174	220	264	310	422	554
87	172	218	261	307	418	548
86	171	215	258	304	413	542
85	169	213	256	300	408	535
84	167	211	253	297	403	529
83	165	208	250	294	398	522
82	163	206	247	291	393	516
81	161	203	244	287	389	510
80	159	201	241	284	384	503
79	157	199	238	281	379	497
78	155	196	235	278	374	490
77	153	194	232	274	369	484
76	152	192	229	271	364	478
75	150	189	226	268	359	471
74	148	187	223	264	354	465
73	146	184	221	261	350	458
72	144	182	218	258	345	452
71	142	180	215	255	340	446
70	140	177	212	251	335	439
69	138	175	209	248	330	433
68	136	172	206	245	325	427
67	134	170	203	242	320	420
66	133	168	200	238	316	414
65	131	165	197	235	311	407
64	129	163	194	232	306	401
63	127	161	191	229	301	395
62	125	158	188	225	296	388
61	123	156	185	222	291	382
60	121	153	183	219	286	375
59	119	151	180	215	282	369
58	117	149	177	212	277	363
57	115	146	174	209	272	356
56	114	144	171	206	267	350
55	112	142	168	202	262	343
54	110	139	165	199	257	337
53	108	137	162	196	252	331
52	106	134	159	193	248	324
51	104	132	156	189	243	318
50	102	130	153	186	238	312
49	100	127	150	183	233	305
48	98	125	148	179	228	299
47	96	122	145	176	223	292
46	95	120	142	173	218	286
45	93	118	139	170	214	280
44	91	115	136	166	209	273
43	89	113	133	163	204	267
42	87	111	130	160	199	260
41	85	108	127	157	194	254
40	83	106	124	153	189	248
39	81	103	121	150	184	241
38	79	101	118	147	179	235
37	77	99	115	143	175	228
36	76	96	112	140	170	222
35	74	94	110	137	165	216
34	72	92	107	134	160	209
33	70	89	104	130	155	203
32	68	87	101	127	150	196
31	66	84	98	124	145	190
30	64	82	95	121	141	184
29	62	80	92	117	136	177
28	60	77	89	114	131	171
27	58	75	86	111	126	165
26	57	73	83	107	121	158
25	55	70	80	104	116	152
24	53	68	77	101	111	145
23	51	65	75	98	107	139
22	49	63	72	94	102	133
21	47	61	69	91	97	126
20	45	58	66	88	92	120
19	43	56	63	85	87	113
18	41	53	60	81	82	107
17	39	51	57	78	77	101
16	38	49	54	75	73	94
15	36	46	51	72	68	88
14	34	44	48	68	63	81
13	32	42	45	65	58	75
12	30	39	42	62	53	69
11	28	37	39	58	48	62
10	26	34	37	55	43	56
9	24	32	34	52	39	50
8	22	30	31	49	34	43
7	20	27	28	45	29	37
6	19	25	25	42	24	30
5	17	23	22	39	19	24
4	15	20	19	36	14	18
3	13	18	16	32	9	11
2	11	15	13	29	5	5
1	9	13	10	26		

PHYSICAL FITNESS INDEX

California Interscholastic Federation Index Groups

Score	Class F 69 and below	Class E 70-74	Class D 75-78	Class C 79-82	Class B 83-87	Class A 88 and over
100	154	152	152	145	144	144
99	152	150	151	144	143	143
98	151	149	150	143	142	142
97	150	148	148	142	141	141
96	149	147	147	141	140	140
95	148	146	146	140	139	139
94	147	145	145	139	138	137
93	146	144	144	138	137	136
92	145	143	143	137	136	135
91	144	142	142	136	135	134
90	143	141	140	135	134	133
89	142	140	139	134	133	132
88	141	139	138	133	132	130
87	139	138	137	132	131	129
86	138	137	136	131	129	128
85	137	136	135	130	128	127
84	136	134	134	129	127	126
83	135	133	132	128	126	125
82	134	132	131	127	125	123
81	133	131	130	126	124	122
80	132	130	129	125	123	121
79	131	129	128	124	122	120
78	130	128	127	123	121	119
77	129	127	125	122	120	118
76	128	126	124	121	119	117
75	127	125	123	120	118	115
74	126	124	122	118	117	114
73	124	123	121	117	116	113
72	123	122	120	116	114	112
71	122	121	119	115	113	111
70	121	119	117	114	112	110
69	120	118	116	113	111	108
68	119	117	115	112	110	107
67	118	116	114	111	109	106
66	117	115	113	110	108	105
65	116	114	112	109	107	104
64	115	113	111	108	106	103
63	114	112	109	107	105	101
62	113	111	108	106	104	100
61	112	110	107	105	103	99
60	111	109	106	104	102	98
59	109	108	105	103	101	97
58	108	107	104	102	99	96
57	107	106	102	101	98	94
56	106	104	101	100	97	93
55	105	103	100	99	96	92
54	104	102	99	98	95	91
53	103	101	98	97	94	90
52	102	100	97	96	93	89
51	101	99	96	95	92	88
50	100	98	94	94	91	86
49	99	97	93	93	90	85
48	98	96	92	92	89	84
47	97	95	91	91	88	83
46	96	94	90	90	87	82
45	95	93	89	89	86	81
44	94	92	88	88	85	79
43	93	91	86	87	83	78
42	92	89	85	86	82	77
41	90	88	84	84	81	76
40	89	87	83	83	80	75
39	88	86	82	82	79	74
38	87	85	81	81	78	72
37	86	84	79	80	77	71
36	85	83	78	79	76	70
35	84	82	77	78	75	69
34	83	81	76	77	74	68
33	82	80	75	76	73	67
32	81	79	74	75	72	65
31	80	78	73	74	71	64
30	79	77	71	73	70	63
29	78	76	70	72	68	62
28	77	75	69	71	67	61
27	76	74	68	70	66	60
26	74	72	67	69	65	59
25	73	71	66	68	64	57
24	72	70	65	67	63	56
23	71	69	63	66	62	55
22	70	68	62	65	61	54
21	69	67	61	64	60	53
20	68	66	60	63	59	52
19	67	65	59	62	58	50
18	66	64	58	61	57	49
17	65	63	56	60	56	48
16	64	62	55	59	55	47
15	63	61	54	58	53	46
14	62	60	53	57	52	45
13	61	58	52	56	51	43
12	59	57	51	55	50	42
11	58	56	50	54	49	41
10	57	55	48	53	48	40
9	56	54	47	52	47	39
8	55	53	46	50	46	38
7	54	52	45	49	45	36
6	53	51	44	48	44	35
5	52	50	43	47	43	34
4	51	49	42	46	42	33
3	50	48	40	45	41	32
2	49	47	39	44	40	31
1	47	46	38	43	39	30

STRENGTH INDEX

California Interscholastic Federation Index Group

Score	Class F 69 and below	Class E 70-74	Class D 75-78	Class C 79-82	Class B 83-87	Class A 88 and over
100	1161	1299	1566	1833	2157	2629
99	1152	1290	1555	1820	2142	2609
98	1143	1281	1543	1807	2126	2589
97	1135	1273	1532	1795	2110	2569
96	1126	1264	1521	1782	2095	2550
95	1118	1255	1509	1769	2079	2530
94	1109	1247	1498	1756	2064	2510
93	1101	1238	1487	1743	2048	2490
92	1092	1229	1476	1731	2033	2470
91	1084	1220	1464	1718	2017	2450
90	1075	1212	1453	1705	2002	2430
89	1067	1203	1442	1692	1986	2410
88	1058	1194	1430	1680	1971	2391
87	1050	1186	1419	1667	1956	2371
86	1041	1177	1408	1654	1940	2351
85	1033	1168	1397	1641	1925	2331
84	1024	1160	1385	1628	1909	2311
83	1016	1151	1374	1616	1894	2291
82	1007	1142	1363	1603	1878	2271
81	999	1133	1351	1590	1863	2251
80	990	1125	1340	1577	1847	2232
79	982	1116	1329	1565	1832	2212
78	973	1107	1318	1552	1816	2192
77	965	1099	1306	1539	1801	2172
76	956	1090	1295	1526	1785	2152
75	948	1081	1284	1513	1770	2132
74	939	1073	1273	1501	1754	2112
73	930	1064	1261	1488	1739	2093
72	922	1055	1250	1475	1723	2073
71	913	1046	1239	1462	1708	2053
70	905	1038	1228	1450	1692	2033
69	896	1029	1216	1437	1677	2013
68	888	1020	1205	1424	1661	1993
67	879	1012	1194	1411	1646	1973
66	871	1003	1182	1398	1630	1953
65	862	994	1171	1386	1615	1934
64	854	986	1160	1373	1600	1914
63	845	977	1148	1360	1584	1894
62	837	968	1137	1347	1569	1874
61	828	959	1126	1335	1553	1854
60	820	951	1115	1322	1538	1834
59	811	942	1103	1309	1522	1814
58	803	933	1092	1296	1507	1794
57	794	925	1081	1283	1491	1775
56	786	916	1069	1271	1476	1755
55	777	907	1058	1258	1460	1735
54	769	899	1047	1245	1445	1715
53	760	890	1036	1232	1429	1695
52	752	881	1024	1220	1414	1675
51	743	872	1013	1207	1398	1655
50	735	864	1002	1194	1383	1636
49	726	855	991	1181	1367	1616
48	717	846	979	1168	1352	1596
47	709	838	968	1156	1336	1576
46	700	829	957	1143	1321	1556
45	692	820	945	1130	1305	1536
44	683	812	934	1117	1290	1516
43	675	803	923	1104	1274	1496
42	666	794	912	1092	1259	1477
41	658	785	900	1079	1243	1457
40	649	777	889	1066	1228	1437
39	641	768	878	1053	1213	1417
38	632	759	866	1041	1197	1397
37	624	751	855	1028	1182	1377
36	615	742	844	1015	1166	1357
35	607	733	833	1002	1151	1337
34	598	725	821	989	1135	1318
33	590	716	810	977	1120	1298
32	581	707	799	964	1104	1278
31	573	698	787	951	1089	1258
30	564	690	776	938	1073	1238
29	556	681	765	926	1058	1218
28	547	672	754	913	1042	1198
27	539	664	742	900	1027	1178
26	530	655	731	887	1011	1159
25	522	646	720	874	996	1139
24	513	637	709	862	980	1119
23	504	629	697	849	965	1099
22	496	620	686	836	949	1079
21	487	611	675	823	934	1059
20	479	603	663	811	918	1039
19	470	594	652	798	903	1020
18	462	585	641	785	887	1000
17	453	577	630	772	872	980
16	445	568	618	759	856	960
15	436	559	607	747	841	940
14	428	551	596	734	826	920
13	419	542	584	721	810	900
12	411	533	573	708	795	880
11	402	524	562	696	779	861
10	394	516	551	683	764	841
9	385	507	539	670	748	821
8	377	498	528	657	733	801
7	368	490	517	644	717	781
6	360	481	505	632	702	761
5	351	472	494	619	686	741
4	343	463	483	606	671	721
3	334	455	472	593	655	701
2	326	446	460	581	640	682
1	317	437	449	568	624	662

FORCE INDEX

Classification Index Groups

Score	Class A Up to 674	Class B 675-709	Class C 710-744	Class D 745-779	Class E 780-814	Class F 815-849	Class G 850-884	Class H 885 Up
100	1371	1484	1613	1793	1941	2188	2491	2571
99	1360	1472	1600	1779	1926	2171	2472	2554
98	1350	1460	1588	1765	1910	2155	2453	2537
97	1339	1449	1575	1751	1895	2138	2434	2521
96	1329	1438	1562	1737	1880	2121	2415	2504
95	1318	1426	1550	1723	1865	2105	2396	2487
94	1308	1415	1537	1709	1850	2088	2377	2470
93	1297	1403	1524	1695	1835	2072	2358	2453
92	1287	1392	1512	1681	1819	2055	2339	2437
91	1276	1380	1499	1667	1804	2039	2320	2420
90	1265	1369	1486	1653	1789	2022	2302	2403
89	1255	1357	1473	1639	1774	2006	2283	2386
88	1244	1346	1461	1625	1759	1989	2264	2369
87	1234	1334	1448	1611	1744	1973	2245	2353
86	1223	1323	1435	1597	1729	1956	2226	2336
85	1213	1311	1423	1583	1713	1940	2207	2319
84	1202	1300	1410	1568	1698	1923	2188	2302
83	1191	1288	1397	1554	1683	1907	2169	2285
82	1181	1277	1385	1540	1668	1890	2150	2269
81	1170	1265	1372	1526	1653	1874	2131	2252
80	1160	1254	1359	1512	1638	1857	2113	2235
79	1149	1242	1346	1498	1623	1841	2094	2218
78	1139	1231	1334	1484	1607	1824	2075	2201
77	1128	1219	1321	1470	1592	1808	2056	2185
76	1118	1208	1308	1456	1577	1791	2037	2168
75	1107	1196	1296	1442	1562	1775	2018	2151
74	1096	1184	1283	1428	1547	1758	1999	2134
73	1086	1173	1270	1414	1532	1742	1980	2117
72	1075	1161	1258	1400	1516	1725	1961	2101
71	1065	1150	1245	1386	1501	1708	1942	2084
70	1054	1138	1232	1372	1486	1692	1924	2067
69	1044	1127	1219	1358	1471	1675	1905	2050
68	1033	1115	1207	1344	1456	1659	1886	2033
67	1023	1104	1194	1330	1441	1642	1867	2017
66	1012	1092	1181	1316	1426	1626	1848	2000
65	1001	1081	1169	1302	1410	1609	1829	1983
64	991	1069	1156	1288	1395	1593	1810	1966
63	980	1058	1143	1274	1380	1576	1791	1949
62	970	1046	1131	1260	1365	1560	1772	1933
61	959	1035	1118	1246	1350	1543	1753	1916
60	949	1023	1105	1232	1335	1527	1735	1899
59	938	1012	1092	1217	1320	1510	1716	1882
58	927	1000	1080	1203	1304	1494	1697	1865
57	917	989	1067	1189	1289	1477	1678	1849
56	906	977	1054	1175	1274	1461	1659	1832
55	896	966	1042	1161	1259	1444	1640	1815
54	885	954	1029	1147	1244	1428	1621	1798
53	875	943	1016	1133	1229	1411	1602	1781
52	864	931	1003	1119	1213	1395	1583	1765
51	854	920	991	1105	1198	1378	1564	1748
50	843	908	978	1091	1183	1362	1546	1731
49	832	896	965	1077	1168	1345	1527	1714
48	822	885	953	1063	1153	1329	1508	1697
47	811	873	940	1049	1138	1312	1489	1681
46	801	862	927	1035	1123	1295	1470	1664
45	790	850	915	1021	1107	1279	1451	1647
44	780	839	902	1007	1092	1262	1432	1630
43	769	827	889	993	1077	1246	1413	1613
42	759	816	877	979	1062	1229	1394	1597
41	748	804	864	965	1047	1213	1375	1580
40	737	793	851	951	1032	1196	1357	1563
39	727	781	838	937	1017	1180	1338	1546
38	716	770	826	923	1001	1163	1319	1529
37	706	758	813	909	986	1147	1300	1513
36	695	747	800	895	971	1130	1281	1496
35	685	735	788	881	956	1114	1262	1479
34	674	724	775	866	941	1097	1243	1462
33	663	712	762	852	926	1081	1224	1445
32	653	701	750	838	910	1064	1205	1429
31	642	689	737	824	895	1048	1186	1412
30	632	678	724	810	880	1031	1168	1395
29	621	666	711	796	865	1015	1149	1378
28	611	655	699	782	850	998	1130	1361
27	600	643	686	768	835	982	1111	1345
26	590	632	673	754	820	965	1092	1328
25	579	620	661	740	804	949	1073	1311
24	568	608	648	726	789	932	1054	1294
23	558	597	635	712	774	916	1035	1277
22	547	585	623	698	759	899	1016	1261
21	537	574	610	684	744	882	997	1244
20	526	562	597	670	729	866	979	1227
19	516	551	584	656	714	849	960	1210
18	505	539	572	642	698	833	941	1193
17	495	528	559	628	683	816	922	1177
16	484	516	546	614	668	800	903	1160
15	473	505	534	600	653	783	884	1143
14	463	493	521	586	638	767	865	1126
13	452	482	508	572	623	750	846	1109
12	441	470	496	558	607	734	827	1093
11	431	459	483	544	592	717	808	1076
10	421	447	470	530	577	701	790	1059
9	410	436	457	515	562	684	771	1042
8	399	424	445	501	547	667	752	1025
7	389	413	432	487	532	651	733	1009
6	378	401	419	473	517	635	714	992
5	368	390	407	459	501	618	695	975
4	357	378	394	445	486	602	676	958
3	347	367	381	431	471	585	657	941
2	336	355	369	417	456	569	638	925
1	326	344	356	403	441	552	619	908

LARSON'S SPRINGFIELD STRENGTH TEST

Classification Index Groups

Score	Class A Up to 674	Class B 675-709	Class C 710-744	Class D 745-779	Class E 780-814	Class F 815-849	Class G 850-884	Class H 885 Up
100	257	291	311	357	384	422	428	510
99	254	288	308	354	380	418	424	505
98	251	285	305	350	377	414	420	500
97	249	282	302	346	373	410	416	496
96	246	279	299	343	369	406	412	491
95	244	276	295	339	365	402	408	486
94	241	273	292	335	362	398	404	481
93	239	270	289	332	358	394	400	476
92	236	267	286	328	354	390	396	471
91	233	264	283	324	350	386	392	466
90	231	261	280	321	347	382	388	461
89	228	258	276	317	343	378	384	456
88	226	255	273	313	339	374	380	451
87	223	253	270	310	335	370	376	446
86	220	250	267	306	332	366	372	441
85	218	247	264	302	328	362	368	436
84	215	244	261	299	324	358	364	431
83	213	241	257	295	320	355	360	426
82	210	238	254	291	317	351	356	422
81	207	235	251	288	313	347	352	417
80	205	232	248	284	309	343	348	412
79	202	229	245	281	305	339	344	407
78	200	226	242	277	302	335	340	402
77	197	223	239	273	298	331	336	397
76	195	220	235	270	294	327	332	392
75	192	217	232	266	290	323	328	387
74	189	214	229	262	287	319	324	382
73	187	211	226	259	283	315	321	377
72	184	208	223	255	279	311	317	372
71	182	205	220	251	275	307	313	367
70	179	202	216	248	272	303	309	362
69	176	199	213	244	268	299	305	357
68	174	196	210	240	264	295	301	353
67	171	193	207	237	260	291	297	348
66	169	190	204	233	257	287	293	343
65	166	187	201	229	253	283	289	338
64	163	184	197	226	249	279	285	333
63	161	181	194	222	245	275	281	328
62	158	178	191	218	242	271	277	323
61	156	175	188	214	238	267	273	318
60	153	172	185	211	234	263	269	313
59	150	169	182	208	230	259	265	308
58	148	166	178	204	227	255	261	303
57	145	163	175	200	223	251	257	298
56	143	160	172	197	219	247	253	293
55	140	157	169	193	215	243	249	288
54	138	154	166	189	212	239	245	284
53	135	151	163	186	208	235	241	279
52	132	148	160	182	204	231	237	274
51	130	145	156	178	200	227	233	269
50	127	142	153	175	197	224	229	264
49	125	139	150	171	193	220	225	259
48	122	136	147	167	189	216	221	254
47	119	133	144	164	185	212	217	249
46	117	130	141	160	182	208	213	244
45	114	127	137	156	178	204	209	239
44	112	124	134	153	174	200	205	234
43	109	121	131	149	170	196	201	229
42	106	118	128	145	167	192	197	224
41	104	115	125	142	163	188	193	219
40	101	112	122	138	159	184	189	214
39	99	109	118	135	155	180	185	209
38	96	106	115	131	152	176	181	205
37	93	104	112	127	148	172	177	200
36	91	101	109	124	144	168	173	195
35	88	98	106	120	140	164	169	190
34	86	95	103	116	137	160	165	185
33	83	92	99	113	133	156	161	180
32	81	89	96	109	129	152	157	175
31	78	86	93	105	125	148	153	170
30	75	83	90	102	122	144	149	165
29	73	80	87	98	118	140	145	160
28	70	77	84	94	114	136	141	155
27	68	74	81	91	110	132	137	150
26	65	71	77	87	107	128	133	145
25	62	68	74	83	103	124	129	141
24	60	65	71	80	99	120	125	136
23	57	62	68	76	95	116	121	131
22	55	59	65	72	92	112	117	126
21	52	56	62	69	88	108	113	121
20	49	53	58	65	84	104	109	116
19	47	50	55	62	80	100	105	111
18	44	47	52	58	77	96	101	106
17	42	44	49	54	73	93	97	101
16	39	41	46	51	69	89	93	96
15	37	38	43	47	65	85	89	91
14	34	35	39	43	62	81	85	86
13	31	32	36	40	58	77	81	81
12	29	29	33	36	54	73	77	76
11	26	26	30	32	50	69	73	72
10	24	23	27	29	47	65	69	67
9	21	20	24	25	43	61	65	62
8	18	17	20	21	39	57	61	57
7	16	14	17	18	35	53	57	52
6	13	11	14	14	32	49	53	47
5	11	8	11	10	28	45	49	42
4	8	5	8	7	24	41	45	37
3	5	2	5	3	20	37	41	32
2	3		2		17	33	37	27
1					13	29	33	22

PHYSICAL CAPACITY INDEX

Classification Index Groups

Score	Class A Up to 674	Class B 675-709	Class C 710-744	Class D 745-779	Class E 780-814	Class F 815-849	Class G 850-884	Class H 885 Up
100	168	204	233	236	329	430	551	613
99	167	202	230	234	326	425	545	607
98	165	201	228	232	323	421	540	601
97	164	199	226	230	320	417	534	595
96	162	197	224	228	316	413	528	590
95	161	195	222	226	313	409	523	584
94	159	193	220	224	310	405	517	578
93	158	191	218	222	307	401	512	572
92	156	189	215	220	304	397	506	567
91	154	187	213	218	301	392	500	561
90	153	185	211	216	297	388	495	555
89	151	183	209	214	294	384	489	549
88	150	181	207	212	291	380	483	543
87	148	179	205	210	288	376	478	538
86	147	177	202	208	285	372	472	532
85	145	175	200	206	282	368	466	526
84	144	174	198	204	279	363	461	520
83	142	172	196	202	275	359	455	515
82	140	170	194	200	272	355	449	509
81	139	168	192	198	269	351	444	503
80	137	166	189	195	266	347	438	497
79	136	164	187	193	263	343	433	492
78	134	162	185	191	260	339	427	486
77	133	160	183	189	256	334	421	480
76	131	158	181	187	253	330	416	474
75	129	156	179	185	250	326	410	468
74	128	154	176	183	247	322	404	463
73	126	152	174	181	244	318	399	457
72	125	150	172	179	241	314	393	451
71	123	148	170	177	237	310	387	445
70	122	146	168	175	234	305	382	440
69	120	145	166	173	231	301	376	434
68	119	143	164	171	228	297	371	428
67	117	141	161	169	225	293	365	422
66	115	139	159	167	222	289	359	417
65	114	137	157	165	218	285	354	411
64	112	135	155	163	215	281	348	405
63	111	133	153	161	212	276	342	399
62	109	131	151	159	209	272	337	393
61	108	129	148	157	206	268	331	388
60	106	127	146	154	203	264	325	382
59	105	125	144	152	200	260	320	376
58	103	123	142	150	196	256	314	370
57	101	121	140	148	193	252	308	365
56	100	119	138	146	190	247	303	359
55	98	118	135	144	187	243	297	353
54	97	116	133	142	184	239	292	347
53	95	114	131	140	181	235	286	342
52	94	112	129	138	177	231	280	336
51	92	110	127	136	174	227	275	330
50	90	108	125	134	171	223	269	324
49	89	106	122	132	168	218	263	318
48	87	104	120	130	165	214	258	313
47	86	102	118	128	162	210	252	307
46	84	100	116	126	158	206	246	301
45	83	98	114	124	155	202	241	295
44	81	96	112	122	152	198	235	290
43	80	94	110	120	149	194	230	284
42	78	92	107	118	146	190	224	278
41	76	91	105	116	143	185	218	272
40	75	89	103	113	139	181	213	266
39	73	87	101	111	136	177	207	261
38	72	85	99	109	133	173	201	255
37	70	83	97	107	130	169	196	249
36	69	81	94	105	127	165	190	243
35	67	79	92	103	124	161	184	238
34	66	77	90	101	121	156	179	232
33	64	75	88	99	117	152	173	226
32	62	73	86	97	114	148	167	220
31	61	71	84	95	111	144	162	215
30	59	69	81	93	108	140	156	209
29	58	67	79	91	105	136	151	203
28	56	65	77	89	102	132	145	197
27	55	63	75	87	98	127	139	191
26	53	62	73	85	95	123	134	186
25	51	60	71	83	92	119	128	180
24	50	58	68	81	89	115	122	174
23	48	56	66	79	86	111	117	168
22	47	54	64	77	83	107	111	163
21	45	52	62	75	79	103	105	157
20	44	50	60	72	76	98	100	151
19	42	48	58	70	73	94	94	145
18	41	46	56	68	70	90	89	140
17	39	44	53	66	67	86	83	134
16	37	42	51	64	64	82	77	128
15	36	40	49	62	60	78	72	122
14	34	38	47	60	57	74	66	116
13	33	36	45	58	54	69	60	111
12	31	35	43	56	51	65	55	105
11	30	33	40	54	48	61	49	99
10	28	31	38	52	45	57	43	93
9	27	29	36	50	42	53	38	88
8	25	27	34	48	38	49	32	82
7	23	25	32	46	35	45	26	76
6	22	23	30	44	32	40	21	70
5	20	21	27	42	29	36	15	65
4	19	19	25	40	26	32	10	59
3	17	17	23	38	23	28	4	53
2	16	15	21	36	19	24		47
1	14	13	19	34	16	20		41

PHYSICAL FITNESS INDEX

Classification Index Groups

Score	Class A Up to 674	Class B 675-709	Class C 710-744	Class D 745-779	Class E 780-814	Class F 815-849	Class G 850-884	Class H 885 Up
100	158	149	148	147	146	145	144	139
99	156	148	147	146	145	144	143	138
98	155	147	146	145	144	143	142	137
97	154	146	145	144	143	142	141	136
96	153	145	144	143	142	141	140	135
95	152	144	143	142	141	140	139	133
94	151	143	142	141	140	139	138	132
93	150	142	141	140	139	138	137	131
92	149	141	140	139	138	137	136	130
91	148	140	139	138	137	136	135	129
90	147	139	138	137	136	135	134	128
89	145	138	137	136	135	134	133	127
88	144	137	136	135	134	133	132	126
87	143	136	135	134	133	132	131	125
86	142	135	134	133	132	131	130	124
85	141	134	133	132	131	130	129	123
84	140	133	132	131	129	129	128	122
83	139	132	131	130	128	128	127	120
82	138	131	130	129	127	127	126	119
81	137	130	129	128	126	125	125	118
80	136	129	128	127	125	124	124	117
79	134	128	127	126	124	123	123	116
78	133	127	126	125	123	122	122	115
77	132	126	125	124	122	121	121	114
76	131	125	123	123	121	120	120	113
75	130	124	122	122	120	119	118	112
74	129	123	121	121	119	118	117	111
73	128	122	120	120	118	117	116	110
72	127	121	119	119	117	116	115	109
71	126	120	118	118	116	115	114	108
70	125	119	117	117	115	114	113	106
69	123	118	116	116	114	113	112	105
68	122	117	115	115	113	112	111	104
67	121	116	114	114	111	111	110	103
66	120	115	113	113	110	110	109	102
65	119	114	112	112	109	109	108	101
64	118	113	111	111	108	108	107	100
63	117	112	110	110	107	107	106	99
62	116	111	109	109	106	106	105	98
61	115	110	108	108	105	105	104	97
60	114	109	107	107	104	104	103	96
59	112	108	106	106	103	103	102	95
58	111	107	105	105	102	102	101	93
57	110	106	104	104	101	101	100	92
56	109	105	103	103	100	99	99	91
55	108	104	102	102	99	98	98	90
54	107	103	101	101	98	97	97	89
53	106	102	100	100	97	96	96	88
52	105	101	99	99	96	95	95	87
51	104	100	98	98	94	94	94	86
50	103	99	97	97	93	93	92	85
49	101	98	96	96	92	92	91	84
48	100	97	95	95	91	91	90	83
47	99	96	94	94	90	90	89	82
46	98	95	93	93	89	89	88	81
45	97	94	92	92	88	88	87	80
44	96	93	91	91	87	87	86	78
43	95	92	90	90	86	86	85	77
42	94	91	89	89	85	85	84	76
41	93	90	88	88	84	84	83	75
40	92	89	87	87	83	83	82	74
39	90	88	86	86	82	82	81	73
38	89	87	85	85	81	81	80	72
37	88	86	84	84	80	80	79	71
36	87	85	83	83	79	79	78	70
35	86	84	82	82	78	78	77	69
34	85	83	81	81	76	77	76	68
33	84	82	80	80	75	76	75	66
32	83	81	79	79	74	75	74	65
31	82	80	78	78	73	73	73	64
30	81	79	77	77	72	72	72	63
29	79	78	76	76	71	71	71	62
28	78	77	75	75	70	70	70	61
27	77	76	74	74	69	69	69	60
26	76	75	72	73	68	68	68	59
25	75	74	71	72	67	67	66	58
24	74	73	70	71	66	66	65	57
23	73	72	69	70	65	65	64	56
22	72	71	68	69	64	64	63	55
21	71	70	67	68	63	63	62	54
20	70	69	66	67	62	62	61	52
19	69	68	65	66	61	61	60	51
18	67	67	64	65	60	60	59	50
17	66	66	63	64	58	59	58	49
16	65	65	62	63	57	58	57	48
15	64	64	61	62	56	57	56	47
14	63	63	60	61	55	56	55	46
13	62	62	59	60	54	55	54	45
12	61	61	58	59	53	54	53	44
11	60	60	57	58	52	53	52	43
10	59	59	56	57	51	52	51	42
9	57	58	55	56	50	51	50	41
8	56	57	54	55	49	50	49	39
7	55	56	53	54	48	49	48	38
6	54	55	52	53	47	47	47	37
5	53	54	51	52	46	46	46	36
4	52	53	50	51	45	45	45	35
3	51	52	49	50	44	44	44	34
2	50	51	48	49	43	43	43	33
1	49	50	47	48	41	42	42	32

STRENGTH INDEX

Classification Index Groups

Score	Class A Up to 674	Class B 675-709	Class C 710-744	Class D 745-779	Class E 780-814	Class F 815-849	Class G 850-884	Class H 885 Up
100	1042	1132	1289	1490	1712	2078	2455	2658
99	1035	1125	1280	1480	1700	2062	2436	2638
98	1027	1117	1270	1469	1688	2047	2416	2618
97	1020	1109	1261	1459	1676	2031	2397	2598
96	1013	1102	1252	1449	1663	2015	2377	2578
95	1005	1095	1243	1438	1651	2000	2358	2558
94	998	1087	1234	1428	1639	1984	2339	2538
93	991	1080	1225	1418	1627	1969	2319	2518
92	983	1072	1216	1407	1615	1953	2300	2498
91	976	1065	1207	1397	1603	1938	2281	2478
90	968	1057	1198	1387	1591	1922	2261	2459
89	961	1050	1189	1376	1579	1906	2242	2439
88	954	1042	1180	1366	1566	1891	2223	2419
87	946	1034	1171	1356	1554	1875	2203	2399
86	939	1027	1162	1345	1542	1860	2184	2379
85	931	1019	1153	1335	1530	1844	2164	2359
84	924	1012	1144	1325	1518	1828	2145	2339
83	917	1004	1135	1314	1506	1813	2126	2319
82	909	997	1126	1304	1494	1797	2106	2299
81	902	989	1116	1294	1482	1782	2087	2280
80	894	982	1107	1284	1469	1766	2068	2260
79	887	974	1098	1273	1457	1751	2048	2240
78	880	967	1089	1263	1445	1735	2029	2220
77	872	959	1080	1253	1433	1719	2009	2200
76	865	951	1071	1242	1421	1704	1990	2180
75	857	944	1062	1232	1409	1688	1971	2160
74	850	936	1053	1222	1397	1673	1951	2140
73	843	929	1044	1211	1384	1657	1932	2120
72	835	921	1035	1201	1372	1642	1913	2101
71	828	914	1026	1191	1360	1626	1893	2081
70	821	906	1017	1180	1348	1610	1874	2061
69	813	899	1008	1170	1336	1595	1854	2041
68	806	891	999	1160	1324	1579	1835	2021
67	798	884	990	1149	1312	1564	1816	2001
66	791	876	981	1139	1300	1548	1796	1981
65	784	869	972	1129	1287	1532	1777	1961
64	776	861	962	1118	1275	1517	1757	1941
63	769	853	953	1108	1263	1501	1738	1922
62	761	846	944	1097	1251	1486	1719	1902
61	754	838	935	1087	1239	1470	1699	1882
60	747	831	926	1077	1227	1455	1680	1862
59	739	823	917	1067	1215	1439	1661	1842
58	732	816	908	1056	1202	1423	1641	1822
57	724	808	899	1046	1190	1408	1622	1802
56	717	801	890	1036	1178	1392	1602	1782
55	710	793	881	1026	1166	1377	1583	1762
54	702	786	872	1015	1154	1361	1564	1743
53	695	778	863	1005	1142	1345	1544	1723
52	688	771	854	995	1130	1330	1525	1703
51	680	763	845	984	1118	1314	1506	1683
50	673	755	836	974	1106	1299	1486	1663
49	665	748	827	964	1093	1283	1467	1643
48	658	740	817	953	1081	1268	1447	1623
47	651	733	808	943	1069	1252	1428	1603
46	643	725	799	933	1057	1236	1409	1583
45	636	718	790	922	1045	1221	1389	1564
44	628	710	781	912	1033	1205	1370	1544
43	621	703	772	902	1021	1190	1350	1524
42	614	695	763	891	1008	1174	1331	1504
41	606	688	754	881	996	1159	1312	1484
40	599	680	745	871	984	1143	1292	1464
39	591	673	736	860	972	1127	1273	1444
38	584	665	727	850	960	1112	1254	1424
37	577	657	718	840	948	1096	1234	1404
36	569	650	709	829	936	1081	1215	1385
35	562	642	700	819	924	1065	1195	1365
34	555	635	691	809	911	1049	1176	1345
33	547	627	682	798	899	1034	1157	1325
32	540	620	673	788	887	1018	1137	1305
31	532	612	663	778	875	1003	1118	1285
30	525	605	654	768	863	987	1099	1265
29	518	597	645	757	851	972	1079	1245
28	510	590	636	747	839	956	1060	1225
27	503	582	627	737	827	940	1040	1206
26	495	574	618	726	814	925	1021	1186
25	488	567	609	716	802	909	1002	1166
24	481	559	600	706	790	894	982	1146
23	473	552	591	695	778	878	963	1126
22	466	544	582	685	766	863	944	1106
21	458	537	573	675	754	847	924	1086
20	451	529	564	664	742	831	905	1066
19	444	522	555	654	729	816	885	1046
18	436	514	546	644	717	800	866	1027
17	429	507	537	633	705	785	847	1007
16	421	499	528	623	693	769	827	987
15	414	492	519	613	681	753	808	969
14	407	484	509	602	669	738	788	947
13	399	476	500	592	657	722	769	927
12	392	469	491	582	645	707	750	907
11	385	461	482	571	632	691	730	887
10	377	454	473	561	620	676	711	867
9	370	446	464	551	608	660	692	848
8	362	439	455	540	596	644	672	828
7	355	431	446	530	584	629	653	808
6	348	424	437	520	572	613	633	788
5	340	416	428	510	560	598	614	768
4	333	409	419	499	548	582	595	748
3	325	401	410	489	535	566	575	728
2	318	394	401	479	523	551	556	708
1	311	386	392	468	511	535	537	688

THE PLACE AND SCOPE OF PHYSIOTHERAPY IN THE PHYSICAL EDUCATION MAJOR

TUCKER JONES, M. A.,
College of William & Mary

Fundamentals of Physical Therapy is a Professional Essential

A perusal of the curricula in Health, Physical Education and Recreation offered by the better colleges and universities seems evidence enough that there is a place and need for education and training in certain aspects of the great and ever broadening field of physiotherapy on the undergraduate level. It is unfortunate, or so it seems to me, that there is so little agreement on the scope, method, content and fundamental techniques. It is often difficult to discover from students of different institutions just what they have learned to do and what they have learned about. Among other questions, I should like direct answers to the following:

Have they a safe and sound attitude concerning ethics and professional relationships? Do they possess enough integrated knowledge, combining physiology, kinesiology, psychology, pathology and method to interpret and carry out in an understanding and exact manner simple directions of physician or surgeon; that is, do they know how to go to work with confidence in their theory, skills and techniques? More important, still, do they know enough to refrain from trying to treat cases beyond the limitations of a three or four semester hour course? This last question needs some qualifying. What do we mean by semester hour? In one college "3 S.H." may be three lectures or two lectures and four hours of laboratory instruction and practice, while in many others it may be only two lectures and two laboratory hours. If the latter be the vogue, I'd suggest that the minimum for the undertaking should be four semester hours. Another consideration in teaching this course, we often fail to realize that a student comes to us (or should) in his senior year with a rather rich background of knowledge and skills which by more suggestion can be turned to account in this subject which is too frequently thought of as something extraneous and merely tacked on to the major instead of being an integral part of one's essential professional equipment. Unfortunately, the importance of corrective physical education was lost in many schools during the period when we were chasing the rainbow of educational recognition by shouting "education through the physical" and forgetting our main responsibility.

How Proper Relationships Can Be Made

If we believe in the value of the training received by the student in earlier courses, and we should if there be proper sequence of studies, inter-course relationships and sensible integration, much unnecessary repetition and fumbling can be avoided. Permit me, please, to offer one example. In any worthwhile course in Foundations and Methods in Physical Education (which should be basic to all subsequent professional units) the classification of pupils, individual differences, the convalescent, the handicapped child, school posture and similar problems must receive serious attention. Right here we should begin the student's acquaintance with physiotherapy and its part in general physical education and health practice. In most schools, of necessity, the adaptation of activities to individual needs will be more a problem of method and general classification than of physical therapy, and if this be efficiently done earlier only the more difficult and complicated cases of adaptation need be considered in this unit. May I suggest, parenthetically, that I believe many who are most enthusiastic about the needs and possibilities for helping people through individual attention, place too many students in corrective classes and keep them out of normal activity sections, often depriving them of socio-physiological benefits and giving but little in return? We surely do not pay enough attention to posture and body building in the periods for the so-called normal groups.

Professional Physiotherapy Our Guide

We know, and the fact should be impressed on our students, that it requires a long and strenuous training plus expertly supervised experience to form a capable physiotherapist, and we should be aware that it is the consensus that the best material for the profession comes from among those who have been graduated by good schools of physical education, and that, therefore, real professional study in this field should be recognized as graduate study. Furthermore, it should cause us to be careful not to overreach in the things we try to teach our undergraduates to do; and to extend, within reason, the things we teach about, since knowledge should exceed practice; and also because it ought to lead to a better appreciation of the scope and importance of physiotherapy as a profession. It is to be hoped, too, that it will lead to some measure of humility in the young teacher who otherwise might venture on questionable and dangerous ground.

Physical Therapy in Athletics

I feel that I should be doing less than my duty at this point were I to avoid mentioning the large amount of malpractice that still goes on at the hands of poorly prepared coaches and trainers, and in many instances entirely without medical supervision. A great number of them have had no professional preparation in physical education, none in physiotherapy, and it is evident from observation of some training quarters and operators that they have little conception of First Aid and sanitation. The evil they do lives after them in crippled and disillusioned ex-athletes, sacrifices to selfish and/or indifferent school and college administrators who seem more heedful of the clamoring of the nonthinking element of the Alumni for winning teams and increased gate receipts than they are of the ideal that education is dedicated to the building of men and to the further "quest of the truth that makes men free." It is probably pertinent to suggest that our national association go on record to the effect that those institutions who hire men (and women) to do the work now so hazardously attempted by the unprepared, require those they engage to be properly trained and certified by recognized schools; also, that no individual be allowed to teach and coach competitive athletics unless he has completed at least a full minor in physical education. A special graduate course in Athletic Physiotherapy of about ten semester-hours and open only to those who have had a minor or major in physical education is, I believe, a necessity. It should be equivalent in time and quality to the summer course now offered at Harvard University Medical School, but its contents modified to suit this particular purpose.

Some Advantages to the Teacher From a Course in the Fundamentals of Physiotherapy

1. It gives a greater and more objective appreciation of the vastness and importance of individual differences.
2. It develops a more intelligent and sympathetic attitude toward the physically less favored than is generally found in our profession; to the physically superior student under sub-normal conditions; and should lead to more humane management and treatment of athletes.
3. It gives more roundness to the teacher's background as to both health and physical education.
4. It provides a means unrivaled for the development and correction of personality among the handicapped through clever adaptations and the right kind of leadership.
5. It makes for better relationships between teacher and physician.
6. It provides a large number of reserves who, with brief intensive courses, could act as aids in physiotherapy in any great emergency.

What to Learn to Do and What to Learn About

To return to our thesis, what can we teach our pupils to do?

1. To perform a local or general massage that will be acceptable anywhere. It should be sound and orthodox and its use under control of a brief but well-understood theory; and a sure knowledge of the contra-indications. Inseparable from massage is the application of heat; i.e., hot water, hand lamps, heat pad, paroffin bath.
2. To be expert in Kinesiology, body mechanics in general, and posture.
3. To be skilled in the application of passive, assistive, and active gymnastics for conditions properly treated by this modality. For the undergraduate this part of his education should be orthodox, precise, and quite formal. Experience, professional contacts and additional education will enable him to modify his techniques in both gymnastics and massage and increase his ability to make adaptations. The ground work must be solid.
4. To do expert work in body building; conditioning; figure control; and, to aid in the physical examination.
5. To do supportive and protective bandaging.
6. To help conduct a school or athletic clinic under proper medical direction and supervision.

What should we teach them about?

1. The elements of pathology.
2. As many related pathological conditions in which physiotherapy is used as time and opportunities for clinical observation permit.
3. The more important historical points which illustrate the development of physical medicines. Too many of our teachers as well as students do not realize that: "To know only what has happened since you were born is to remain a child all your life."

BOOK ANNOUNCEMENTS

GAMES AND DANCES. (Revised) William A. Stecher and Grover W. Mueller. (Philadelphia: Theodore Presser Company, 1941) 392 pages, $3.00.

Grover W. Mueller, Director of Physical and Health Education, Philadelphia Public Schools, has collaborated with William A. Stecher in revising and re-writing *Games and Dances*. In its present form, the book is an even more useful and comprehensive sourcebook than it was formerly. Written for those charged with selecting activities for various age groups in school situations, playgrounds, camps and recreation centers. The book contains a fine collection of games and dances in addition to full chapters on Demonstration Numbers, Track and Field Events, Competitive Mass Athletics, Playground and Camp Activities, Achievement Standards and one devoted to a presentation of a pageant, "The Revival of the Play Spirit in America." This revised edition seems admirably suited for use as a text in teacher training institutions and as a handbook for teachers, directors, camp counselors and recreational leaders.

NORMAL AND ELEMENTARY PHYSICAL DIAGNOSIS. (Third Edition) Whitelaw R. Morrison, M. D., and Laurence B. Chenoweth, M. D. (Philadelphia: Lea and Febiger, 1941) 368 pages, $4.00.

New and significant material has been included in this second revision of a standard, well-liked textbook. Departures or deviations from the regular day to day reactions of pupils are often apparent to teachers. To what these departures or deviations may lead are indicated precisely and thus may make possible earlier adequate measures in prevention and correction. The material will be very helpful in the training of observers (teachers and students) for this important phase of health activities.

PHYSICAL EDUCATION COURSE OF STUDY, GRADES 4-8 (Elementary Schools), CURRICULUM BULLETIN 73. (Cincinnati: Cincinnati Public Schools, 1941), 183 pages, (Mimeographed) $1.00.

This Course of Study is the outgrowth of an intensive curriculum project initiated in the late Fall of 1938. A fine publication to assist the teacher in the elementary grades. Contains essential materials dealing with: Organization and Conduct of the Program, Rhythmical Activities, Games, Apparatus Activities, Individual Athletic Events and Remedial Physical Education. Appendixes cover Physical Education and Safety, Intramural Activities, Interschool Competition and Play Day Organization.

PHYSICAL EDUCATION COURSE OF STUDY, GRADES 7-12, BOYS (Junior and Senior High Schools), CURRICULUM BULLETIN 75. (Cincinnati: Cincinnati Public Schools, 1941) 216 pages, (Mimeographed) $1.00.

A result of constructive criticism and try-out course of study. Original try-out course of study was revised during the school year of 1940-41. The present publication has grown gradually out of the experience of the Cincinnati teachers in their daily work. It is intended to assist teachers in organizing their work so as to get the maximum out of the available means and facilities of instruction. Contains Introduction, Physical Education Activities, Grades 7, 8 and 9, Safety in Physical Education, Supplementary Materials, Physical Education Activities, Grades 10, 11 and 12, Junior and Senior High School Intramurals, Bibliography, and an Appendix dealing with Interscholastic Athletics.

PHYSICAL EDUCATION COURSE OF STUDY, GRADES 7-12, GIRLS (Junior and Senior High Schools) CURRICULUM BULLETIN 74. (Cincinnati: Cincinnati Public Schools, 1941) 202 pages, (Mimeographed) $1.00.

A third of three courses of study recently published by the Cincinnati Public Schools. Organized in three Sections: Section One, Point of View; Section Two, Junior High School; and Section Three, Senior High School. Section dealing with Junior High School Activities includes the following: Team Sports, Individual Sports, Games and Relays, Dancing, Swimming and Apparatus. Section dealing with Senior High School Activities includes the following: Team Sports, Individual and Dual Sports, Dancing, Swimming, Apparatus, Tactics, Rhythmic Exercises, Adjustment and Bibliography.

PHYSICAL EDUCATION IN THE SECONDARY SCHOOL. Laurentine B. Collins and Rosalind Cassidy. (New York: A. S. Barnes and Company, 1941) 120 pages, $1.25.

The revision of the earlier statements of the Progressive Education Association Curriculum Workshop which was so well reviewed originally. The clear statements of the basic philosophy, implications for redirections, and problems which need study are decidedly to the point. All secondary school physical educators, and teacher training people should study this valuable, constructive, and timely report.

SWORD PLAY. Scott D. Breckinridge and Scott D. Breckinridge, Jr. (New York: A. S. Barnes and Company, 1941) 100 pages, $1.75.

When the senior author was asked to coach Fencing he found no American source available. Thus, he has written this instructive manual in a readily understandable form for others finding themselves in the same position. The material is based on the French School of the Foil. While well-written, it would have been extremely helpful to have included more of the fine black and white sketches throughout the entire manual to supplement the written descriptions.